STUDENTS' EDUCATIONAL NUMBER.

THE

VETERINARY JOURNAL

AUGUST, 1905.

Editorial.

THE progress which has been made during the past twenty years by the veterinary profession has been very great, and in the present number we are grouping together details and particulars of the ways and means by which entrance can be obtained into the veterinary world, with a view that it may be of value as a hand-book of reference to those who have relatives or friends desirous of becoming graduates.

It was only in 1881 that the "Veterinary Surgeons Act" was passed, and until that time it was permissible for anybody to designate himself a veterinary surgeon. The Act of Parliament which was passed in that year forbade anyone to take or use the title "Veterinary Surgeon" or any such name or title which implied that they were practising the veterinary art. It is true that at times one comes across advertisements or descriptions so skilfully worded that they are able to defy the Act, but in the main the parliamentary powers which were granted have been successful in preventing the establishment of quacks and such-like people on anything like a satisfactory footing. The numerous decisions which have been given from time to time against the use of the words "veterinary forge" by unqualified persons are evidences of the power of the Act, as was also the case recently decided in the Stratford County Court, in which

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judgment was given against an unqualified person for foisting himself upon a credulous public under the title of "Equine and Canine Specialist."

The attempt to introduce veterinary science on a rational footing in Great Britain was first made in 1791 by Monsieur Vial de St. Bel, a French veterinary surgeon who had acquired his education at one of the Continental schools. The College in Camden Town is the result of what was at first a very small undertaking, and could he but see it now Monsieur de St. Bel would be much gratified at the present state of affairs.

Up to 1844 the Royal Veterinary College taught, examined, and conferred diplomas, but at this date the Royal College of Veterinary Surgeons was founded, and to it was allotted the exclusive right to grant the necessary licenses or diplomas to practise. This body possesses the exclusive right at the present time, and it is to be hoped that it will successfully maintain it, for our "One Portal" system is the envy of our friends in the sister profession, the majority of medical men feeling keenly the disadvantages of the system of many portals, one or more of which can generally legitimately be termed a back-door entrance. Forty years ago no evidence whatever of proficiency in education was demanded, and the period of professional study was only a matter of a few months.

At the present time the educational test for matriculation is identical with that of the medical and other learned professions, and before a man can become a duly qualified M.R.C.V.S. it is necessary that he should have attained the age of 21 years, and have spent a minimum period of four years, after matriculating, in one or other of the Colleges which are affiliated by Royal Charter to the Royal College of Veterinary Surgeons.

The Colleges themselves have now increased to five in number —two in England, two in Scotland, and one in Ireland; and the Universities have opened their doors to admit our graduates, and these alone, to certain scientific degrees. Post-graduate Courses and Diplomas are to be had, one might almost say, in profusion; and those who are desirous of obtaining them are able to make quite a selection. Full particulars of these will be given in our next number, as this one is especially intended for the information of the intending student.

The Colonies, the Army Department, and various Public Health Services, afford outlets to those whose taste does not lie towards general practice, while the schools afford facility for a limited number of teachers and instructors.

It may be that motor traction has come to stay, but we certainly think that the outlook of the profession was never brighter than it is to-day. It may not offer many excessively large prizes, but for those who are content to live their lives in a sphere of usefulness, whose aim is not entirely confined to the collection of wealth, and who are so fond of animals that they cannot keep away from them, we venture to assert that they might do far worse, looking at it from every point of view, than to join our small but honourable profession.

It is the age of the "Specialist," and even with us the tendency in this direction is becoming more and more marked. We have those amongst us whose work is confined entirely to horses, whilst others attend to nothing else but dogs and cats, and again there are some who have established reputations as consultants in surgery or some other particular branch. For experienced men, to make a speciality of some subject or other, the idea is well worth consideration. It is in this way that our knowledge is advanced, as of necessity a man who devotes his whole attention to one thing must know more about it than his fellow man, even if he only learns the pitfalls which are to be avoided. The animal kingdom, too, is benefited, for it is easy to understand, if we take an operation by way of illustration, that the specialist must handle his patient a little more deftly than one who only operates once in a way; and lastly, looking at it from the lowest and most selfish point of view, the pecuniary one, it is of advantage to the specialist himself on account of the increased fee which he can claim by reason of his greater experience.

THE NEW PRESIDENT OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

MR. JOSEPH ABSON, F.R.C.V.S.

Our portrait this month is that of the newly elected President of the Royal College of Veterinary Surgeons. This position is the highest honour which the veterinary profession is able to confer on any of its members, and Mr. Abson was elected by the unanimous vote of his fellow-members on the Council.

Mr. Abson was born in 1858, and served his pupilage with the late Mr. John Darcy Peech, of Wentworth, near Rotherham. He graduated in 1882 from the New College of Edinburgh, and commenced practice in the same year at Sheffield, where he has occupied many important positions, including those of Veterinary Inspector to the City, to the Sheffield Police District of the West Riding, and to the Board of Agriculture. Mr. Abson obtained the Fellowship diploma in 1891, and was elected to a seat on the Council in 1894. As a Past-President of the Lancashire Veterinary Medical Association, and a prominent member in veterinary movements, political and social, Mr. Abson's name is always to be found occupying a prominent place in all matters connected with the welfare and advancement of the profession. Well known in the hunting-field and with a host of friends throughout Yorkshire and the North of England, he is a popular President, and the Council is to be congratulated on selecting a man who has already a reputation for genial tact and business capability.

PRELIMINARY EDUCATION.

The educational year commences on October 1, and this number of The Veterinary Journal is published with the object of giving parents and guardians some information how their sons or wards can obtain the Diploma and become Members of the Royal College of Veterinary Surgeons.

There is only one Diploma given in the United Kingdom, viz., that of the Royal College of Veterinary Surgeons, whose premises are at 10, Red Lion Square, Holborn, London, and who conduct the examinations in England, Scotland, and Ireland. There are five Veterinary Colleges or Schools—the Royal Veterinary College, Camden Town, London, the School of Veterinary Medicine and Surgery of the Liverpool University, the Royal (Dick) Veterinary College, Edinburgh, the Glasgow Veterinary College, and the Royal Veterinary College of Ireland, Dublin. A calendar of the regulations, fees, &c., can be obtained in each case by application to the respective secretaries.

A considerable amount of confusion exists in the minds of the public as to these institutions, but briefly, the Royal College of Veterinary Surgeons is the one examining body that grants diplomas, and the five veterinary colleges are teaching schools only, and do not grant diplomas. Unlike the medical and dental professions, the lady student is not yet admitted, although on more than one occasion applications have been made, and in France, Russia and Australia, ladies have already become qualified. Whether a student takes his

course in England, Scotland, or Ireland, he must pass identically the same body of examiners, and take exactly the same Diploma, this being the *only* one which gives permission to practise in the British Isles.

The first step to be taken is to pass the matriculation examination in general education. This *must* be done before a student can present himself for the A or first professional examination, and it is advisable that it should be passed before entering as a student at one of the colleges and commencing the professional studies. The compulsory subjects every candidate *must* pass in are :—

(1) English, including dictation, composition, parsing, and derivation (parsing and derivation taken from Goldsmith's "Deserted Village").

(2) Latin : Grammar, translation into English from "Cæsar de Bello Gallico," Book V., and "Virgil's Æneid," Book I., lines 1-401, and translations of easy passages not taken from specified authors.

(3) Mathematics, including :

A. Arithmetic. The common rules and vulgar and decimal fractions.

B. Algebra. Up to and including simple equations.

C. Geometry : Euclid, Books I., II., III., with easy deductions, and *one* of the following optional subjects :—

(*a*) Greek : Grammar, translation from Xenophon, "Anabasis," Book I. Derivation of English words from Greek.

(*b*) French : "Mademoiselle de la Siglière," by Jules Sandeau. Parsing and translation of simple sentences from English into French.

(*c*) German : "Immensee," by T. Storm. Parsing and translation of simple sentences from English into German.

(*d*) Italian.

(*e*) Any other modern language.
(Candidates who profess Italian or any other modern language will be required to submit to the examiners an adequate profession).

(*f*) Logic : Jevons' "Logic"—Lessons, i.-vi. ; viii.-x. ; xii.-xxi. ; xxvii.-xxxi.

The compulsory and optional subjects must all be passed at one examination.

Examinations will be held at the Royal Veterinary College by the Educational Institute of Scotland in April, July, and September. The Educational Institute likewise holds examinations simultaneously in Edinburgh, Glasgow, and Dublin.

Examinations will also be held by the College of Preceptors in London, Birmingham, Bristol, Edinburgh, Glasgow, Leeds, and Liverpool, and candidates who may wish to present themselves at these places are required to give *thirty days'* written notice to the Secretary of the College of Preceptors, Bloomsbury Square, of their desire to be examined.[1]

A large number of certificates from various educational bodies are accepted as equivalent to this examination.

[1] Copies of papers set by the College of Preceptors at previous examinations may be obtained from F. Hodgson, 89, Farringdon Street, E.C., price, by post, 7d. per set.

I. UNIVERSITY EXAMINATIONS HELD IN THE UNITED KINGDOM.

A.

The final examination for a degree in arts or science of any university in the United Kingdom.

B.

University of Oxford.

Junior Local Examinations. (Certificates to include the required subjects.)

Senior Local Examinations. (Certificates to include the required subjects.)

Higher Local Examinations. (Certificates to include the required subjects.)

Responsions. (Certificates to be supplemented by others showing that the required mathematical subjects have been passed.)

Moderations. (Certificates to include the required subjects.)

University of Cambridge.

Junior Local Examinations. (Certificates to include the required subjects.)

Senior Local Examinations. (Certificates to include the required subjects.)

Higher Local Examinations. (Certificates to include the required subjects.)

Previous Examination. (Certificates to include the required subjects.)

General Examination. (Certificates to include the required subjects.)

Oxford and Cambridge Schools' Examination Board.

Lower Certificate Examinations. (Certificates to include the required subjects.)

Higher Certificate Examinations. (Certificates to include the required subjects.)

University of Durham.

Examination for Certificate of Proficiency. (The required subjects to be passed at one time.)

Senior Local Examinations. (Certificate to include the required subjects.)

University of London.

Matriculation Examination. (Certificate to include the required subjects.)

Victoria University of Manchester, University of Liverpool, and University of Leeds.

Matriculation Examination. (Certificate to include the required subjects.)

University of Birmingham.

Matriculation Examination. (Certificate to include the required subjects.)

UNIVERSITY OF WALES.

Matriculation Examination. (The required subjects to be passed at one time.)

UNIVERSITIES OF SCOTLAND.

Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery. (The required subjects to be passed at one or not more than two examinations.)

Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science. (Certificates to include the required subjects.)

UNIVERSITY OF ST. ANDREWS.

Final Examination for the Diploma of L.L.A.

UNIVERSITY OF DUBLIN.

Principal Public Entrance Examinations. (The required subjects to be passed at one time.)

Examinations for the First, Second, Third, or Fourth Year in Arts. (Certificate to be signed in the approved form by the Medical Registrar of the University.)

ROYAL UNIVERSITY OF IRELAND.

Matriculation Examination. (Certificate to include the required subjects.)

II. GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM.

SCOTTISH EDUCATION DEPARTMENT.

Leaving Certificate Examination: passes in the Lower Grade. (The required subjects to be passed at one or not more than two examinations.)

Leaving Certificate Examinations: passes in Higher Grade or Honours. (To include the required subjects.)

INTERMEDIATE EDUCATION BOARD OF IRELAND.

Middle Grade Examination. (The required subjects to be passed at one time.)

Senior Grade Examination. (Certificates to include the required subjects.)

CENTRAL WELSH BOARD.

Senior Certificate Examinations. (Certificates to include the required subjects.)

III. EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM.

COLLEGE OF PRECEPTORS.

Examinations for First-class Certificate. (The required subjects to be passed at one or not more than two examinations.)

Preliminary Examination for Medical Students. (The required subjects to be passed at one time.)

EDUCATIONAL INSTITUTE OF SCOTLAND.

Preliminary Medical Examination. (The required subjects to be passed at one time.)

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS IN IRELAND.

Preliminary Examination. (The required subjects to be passed at one time.)

IV. EXAMINATIONS HELD OUT OF THE UNITED KINGDOM.

UNIVERSITY OF MALTA.

Matriculation Examination.

UNIVERSITY OF CALCUTTA.

First Examination in Arts.

UNIVERSITY OF MADRAS.

First Examination in Arts.

UNIVERSITY OF BOMBAY.

Matriculation Examination.

PUNJAB UNIVERSITY.

Intermediate Examination in Arts.

UNIVERSITY OF ALLAHABAD.

Intermediate Examination in Arts.

CEYLON MEDICAL COLLEGE.

Preliminary Examination.

UNIVERSITY OF M'GILL COLLEGE, MONTREAL.

Matriculation Examination.

UNIVERSITY OF BISHOP'S COLLEGE, MONTREAL.

Matriculation Examination.

COLLEGE OF PHYSICIANS AND SURGEONS OF THE PROVINCE OF QUEBEC.

Matriculation Examination.

UNIVERSITIES AND COLLEGES OF THE PROVINCE OF ONTARIO.

Departmental Arts Matriculation Examination (conducted under the direction of the Provincial Education Department).

UNIVERSITY OF MANITOBA.

Preliminary and Previous Examinations.

UNIVERSITY OF NEW BRUNSWICK, FREDERICTON.

Matriculation Examination.

UNIVERSITY OF MOUNT ALLISON COLLEGE, NEW BRUNSWICK.
Matriculation Examination.

COLLEGE OF PHYSICIANS AND SURGEONS, NEW BRUNSWICK.
Matriculation Examination.

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX, NOVA SCOTIA.
Matriculation Examination.

PROVINCIAL MEDICAL BOARD OF NOVA SCOTIA.
Preliminary Examination.

NEWFOUNDLAND MEDICAL BOARD.
Preliminary or Matriculation Examination.

UNIVERSITY OF MELBOURNE.
Matriculation Examination.

UNIVERSITY OF SYDNEY.
Matriculation Examination.
First Year Examination in Arts.
Senior Public Examination.
Entrance Examination for Medicine and Science.

UNIVERSITY OF ADELAIDE.
Senior Public Examination.
First Year Examination in Arts.

UNIVERSITY OF TASMANIA.
Senior Public Examination.

UNIVERSITY OF THE CAPE OF GOOD HOPE.
Matriculation Examination.

UNIVERSITY OF OTAGO.
Preliminary Medical Examination.

UNIVERSITY OF NEW ZEALAND.
Preliminary Examination for Medical Students.

CODRINGTON COLLEGE, BARBADOS.
Examinations qualifying for a Degree in Arts at the University of Durham.

FOREIGN UNIVERSITIES IN EUROPE.
The German Abiturienter-Examen of the Gymnasia and Real-Gymnasia; Examinations entitling to the French Diplomas of Bachelier-ès-Lettres and Bachelier-ès-Sciences, and other corresponding Entrance Examinations to the Universities in Europe.

EGYPTIAN GOVERNMENT.
Examination for the Secondary Education Certificate.

*** (*a*) No certificate from the Indian and Colonial Bodies in the foregoing Section (IV.) is accepted unless it shows that the examina-

tion has been conducted by or under the authority of the Body granting it, includes all the required subjects, and states that all the subjects of examination have been passed at one time.

(*b*) In the case of natives of India or other Oriental countries whose vernacular is other than English, an examination in a classical Oriental language may be accepted instead of an examination in Latin.

As there is a probability in the near future of a University degree for veterinary surgeons, candidates are strongly advised to, if possible, pass a high standard Preliminary Examination—that is, one which will qualify for University graduation.

THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE Royal College of Veterinary Surgeons, through its Council, forms the ruling body of the Veterinary Profession. It holds the exclusive right to grant the diploma by which license is given to practise in the British Isles, and in its Council Chamber are formed all the rules and regulations which guide the members in matters of etiquette and other things. Founded in 1844, it was not until 1881 that the Veterinary Surgeons Act was passed to place the profession on a sure foundation, and since that date a further supplemental charter has been added.

Until 1881, anyone who so wished might designate himself a veterinary surgeon; and at this date, in order to behave fairly to those who had some claim to the title on account of the fact that they were obtaining a living by doctoring sick animals, all who could legitimately prove that they had been practising for five years previous to this date were allowed to become registered as existing practitioners. They were not allowed to use the title M.R.C.V.S., but were still allowed to practise and to be termed "Veterinary Surgeons." Since that date it has been a punishable offence for a man who does not hold the qualification to use the word "Veterinary" in any sense which implies that he possesses the diploma of membership.

At the present time there are nearly 3,500 qualified members on the Register and nearly 400 registered practitioners. There are thirty-two Members of Council and twenty-four Examiners. The Council are elected by the votes of the members of the profession, and the Court of Examiners is selected by the Council; for the latter honour the Fellowship Diploma is essential, unless the examiner is selected from the scientific or medical world.

The Council Chamber is situated at No. 10, Red Lion Square, London, W.C., and in addition to this room accommodation is found for a museum, a very complete library, Secretary's offices, and other necessary adjuncts. The Council Chamber is decorated with paintings or portraits of Fleming, Williams, McCall, Fitzwygram, or others whose names are well known in veterinary science, whilst the Museum contains, amongst other things, the skeleton of the well known racing sire "Eclipse."

Full particulars regarding entrance into the profession, the matriculation, and all other examinations, can always be obtained by application to the Secretary, Mr. A. W. Hill, and an official Register, containing the authorised list of members, &c., can be purchased either there or at the printers, (Messrs. Adlard and Son, Bartholomew Close, E.C.), price 2s. 6d.

REGULATIONS FOR THE PROFESSIONAL EXAMINATIONS.

The regulations now in force as to the professional examinations are:—

Every student who is a candidate for the diploma of the Royal College of Veterinary Surgeons shall, during his academical course, be subjected to, and shall be required to pass, four professional examinations.

No candidate shall be eligible for any examination unless the examination fee be paid at least seven days prior to such examination.

Any candidate who through misstatement, error, or false certificate, shall seek, or be led, to apply for any examination, shall be prohibited from undergoing that examination, or if he has undergone it, shall not be permitted to enjoy the advantages to be derived therefrom, and shall be declared disqualified for such examination for such a period as the Council shall see fit.

Should a candidate conduct himself disrespectfully or otherwise improperly at any meeting of the Court of Examiners, the chairman of the class is empowered to stay the examination of such candidate, and report the transaction to the Council, who shall deal with the offender.

An examination fee of five pounds shall be paid for each examination, and successful candidates for the diploma shall pay a further fee of one pound for registration.

Should a student fail in any examination he shall pay a further fee of three guineas for re-examination.

No student shall be eligible for the first examination until he shall have attended one session (three terms[1]) at a recognised veterinary college or school after passing the Preliminary Educational Examination.

No student shall be eligible for the second examination until he shall have attended one session (three terms) at a recognised college or school after passing his first examination.

No student shall be eligible for the third examination until he shall have attended one session (three terms) at a recognised college or school after passing his second examination.

No student shall be eligible for the fourth examination until he shall have attended one session (three terms) at a recognised college or school after passing his third examination.

A session shall be a period of not less than thirty weeks, exclusive of the recognised holidays of the institution at which the student shall have studied.

No rejected student shall be eligible for re-examination unless he produces satisfactory evidence that he has attended a full term of ten weeks at a veterinary college between the dates of rejection and re-examination.

If a candidate who has been rejected at a final examination fails to present himself for re-examination within one year (except in case of illness or other cause satisfactorily certified) he shall be precluded from further re-examination.

Candidates shall be tested in each subject by a written examination

[1] A term is a period of ten weeks' attendance at college.

where not otherwise specified, and an oral examination on the living or other specimens. Written papers to consist of six questions, but only four to be attempted, except in Class D, when eight questions shall be set, and six attempted.

The written examination shall commence at 10 a.m. on the days to be fixed by the Council. Each examiner shall set three questions (except in Class D, when each examiner shall set four questions), the answers to which he shall read, mark, and return to the Secretary as soon as possible. The time allowed for each subject is specified in the regulations. Answers shall be written on one side of the paper only, and each question answered on a separate sheet. Each candidate shall be given a number on entering the room, and each paper shall be signed with such number only, and not with the name of the candidate. Passage of papers, references to books or documents, talking or copying shall render the candidate liable to immediate dismissal from the examination room, at the discretion of the representative or representatives of the Council present.

There shall not be less than two examiners to each subject.

SYLLABUS OF THE EXAMINATIONS.

The subjects for each examination, and the time to be devoted to each subject, are as follows :—

EXAMINATION A.

ANATOMY OF DOMESTICATED ANIMALS.

Synopsis of Subjects.

BONES.
LIGAMENTS.
JOINTS.

(Written, two hours. Oral, fifteen minutes.)

CHEMISTRY AND ELEMENTARY PHYSICS.

Synopsis of Subjects.

ELEMENTARY PHYSICS.—Weight—Elasticity and pressure—Levers—Pulleys—Metric system of weights and measures—Specific gravity—Air pump—Barometer—Diffusion of gases and liquids—Heat—Expansion—Change of state—Freezing—Boiling—Evaporation—Specific heat—Radiant heat.

INORGANIC CHEMISTRY.—Mixtures—Compounds—Elements—Laws of combination by weight and volume—Atomic theory—Use of symbols and equations—Chemical classification upon physical and chemical data.

Hydrogen — Oxygen — Nitrogen — The halogens — Sulphur—Phosphorus—Carbon—Boron—Silicon—The chief compounds of these elements.

METALS.—The following metals and their most important compounds: Potassium—Sodium—Barium — Calcium — Magnesium — Zinc—Aluminium — Manganese — Chromium —Iron—Silver—Copper—Lead—Mercury—Arsenic—Antimony—Bismuth.

ORGANIC CHEMISTRY.—General principles of ultimate analysis—Determination of molecular weights.

Classification—Homologous series.
The chief hydrocarbons, including benzene.
Alcohols—Ethers—Substitution compounds—Compound ethers (so called)—Phenol.
Aldehyde—The chief acids and their salts.
The fixed oils and fats—Saponification.
The Carbohydrates—Fermentation.
Cyanogen—Urea.
Alkaloids: a few of the most important.

(Written, two hours. Oral, fifteen minutes.)

BIOLOGY—ELEMENTARY ZOOLOGY AND BOTANY.

Synopsis of Subjects.

ZOOLOGY.

(1) Notions of General Classification: Sub-kingdoms, Classes, Orders, Species, Races.
(2) INVERTEBRATES: Characteristics, classes.
(3) Protozoa: Amœbæ, Gregarines.
(4) Echinoderms: Characteristics.
(5) Worms: Flukes, Tapeworms, &c.
(6) Mollusca: Characteristics.
(7) Insecta: Characteristics, metamorphosis. Examples of useful and deleterious insects.
(8) VERTEBRATES: Organisation, skeleton, &c.
(9) Amphibia: Characteristics, metamorphosis.
(10) Fishes: Characteristics.
(11) Reptiles: Characteristics.
(12) Birds: Characteristics.
(13) Mammals: Characteristics, Elementary notions of order.

BOTANY.

(1) Vegetable Kingdom—Difference from Animal Kingdom.
(2) Elementary ideas about the Organs and their Functions.
(3) Flowering and non-Flowering Plants.
(4) Organs of nutrition—Root, stem, leaves—Organs of reproduction—The flower (calyx, corolla)—Androcæum and gynæcium—Examples chosen from common or useful plants—The fruit, seed, germination.
(5) Non-flowering plants—Elementary ideas about algæ and fungi.
(6) Classification (Principles) of Plants—Natural orders, sub-orders, classes, species, &c.
(7) Characters of the following natural orders of plants of importance to the veterinary profession.

ANGIOSPERMEÆ.—*Dicotyledons.*

Ranunculaceæ—Papaveraceæ—Cruciferæ—Leguminosæ—Rosaceæ—Umbelliferæ—Compositæ—Solanaceæ—Scrophulariaceæ.

Monocotyledons.

Liliaceæ—Cyperaceæ—Gramineæ.

GYMNOSPERMEÆ.

Coniferæ.

(Written, two hours. Oral, fifteen minutes.)

EXAMINATION B.

Anatomy of Domesticated Animals.

Synopsis of Subjects.

Horse.
Ox.
Sheep.
Pig.
Dog.

(Written, two hours. Oral, fifteen minutes.)

Histology and Physiology.

Synopsis of Subjects.

Histology.

The recognition and description of—
Animal tissues and fluids.
Blood—Lymph.
Epithelial tissue.
Connective tissue.
Muscular tissue.
Nervous tissue.

The arrangement of tissues in special organs, or the microscopical structure of parts.

Simple histological methods.

Physiology.

Structural and physical properties of organisms.
Chemical compcsition of the animal body.
Vital characters of the animal body.
Food.
The blood.
Digestion.
Absorption.
Circulation.
Respiration.
Secretion.
Excretion.
Nutrition.
Animal heat.
Muscular action.
Locomotion.
The nervous system.
The special senses.
Reproduction, including actation.
Development.

Candidates are expected to be familiar with the characteristic chemical reactions of albumen and sugar, and with the elementary chemical examinations of milk, bile, and urine.

(Written, two hours. Oral, twenty minutes.)

STABLE MANAGEMENT AND MANIPULATION OF DOMESTICATED ANIMALS AND PRINCIPLES OF SHOEING.

Synopsis of Subjects.

Approaching animals.
Securing animals in stables.
Handling animals.
Handling special parts—head, foot, tail, &c.
Use of twitches, muzzles, rings.
Grooming—Tools and implements.
Clothing—Bandaging.
Clipping—Singeing.
Halters—Pillar-reins.
Adjusting saddles, bridles, collars, &c.
Principles of shoeing.

(Oral only, thirty minutes.)

EXAMINATION C.

MORBID ANATOMY, PATHOLOGY, AND BACTERIOLOGY.

Synopsis of Subjects.

Morbid cellular changes.
Plethora—Anæmia.
Hypertrophy—Atrophy.
Hyperæmia.
Œdema—Dropsy.
Hæmorrhage.
Inflammation—General phenomena—Changes in blood, changes in tissues—Exudation—Products of inflammation—Varieties of inflammation—Methods of repair—Effects on special tissues—Effects on special organs.
Necrosis—Gangrene.
Thrombosis—Embolism.
Degenerations: Albuminoid — Fatty — Colloid — Mucoid — Calcareous—Pigmentary—Gelatinoid—Fibroid.
Morbid changes in blood: Qualitative—In relation to pressures.
Tumours.
Cysts.
Fever.
Septicæmia.
Pyæmia.
Specific infections—their cause, local changes, general effects.
Elementary bacteriology as applied to disease of domestic animals.

(Written, two hours. Oral, fifteen minutes.)

MATERIA MEDICA, PHARMACY, THERAPEUTICS, AND TOXICOLOGY.

Synopsis of Subjects.

Forms in which medicines are used.
Methods of administration or application.
Actions and uses of medicines.
Classification of medicines.

Special agents—their actions, doses, derivation, preparation, &c.
Incompatibles.
Impurities.
Writing and reading prescriptions.
Poisons: Mineral, vegetable, animal.
Symptoms of poisoning.
Antidotes: chemical and physiological.
Tests.

(Written, two hours. Oral, thirty minutes.)

VETERINARY HYGIENE AND DIETETICS.

Synopsis of Subjects.

Water—Quality, quantity.
Air—quality, quantity.
Food—Grasses, cereals, roots, &c.
Stables, Cowsheds, Kennels, Pigsties, Sheep-pens } Construction, aspect. Ventilation, drainage. Fittings.
Feeding—General principles, quantities, varieties of foods, preparation and mixing food.
Grooming horses.
Milking cows.
Washing—sheep, dogs.
"Dipping."
General principles of breeding.
Care of animals during gestation.
The Oral Section to include—
Recognition of defects in stables.
Recognition of defects in harness.
Recognition of defects in forage.
A general acquaintance with animal conformation, especially as regards the Horse: his points, marks, height, breed, colour, age, adaptability for work.

(Written, two hours. Oral, fifteen minutes.)

EXAMINATION D.

PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE.

(Exclusive of Morbid Anatomy and Pathology.)

Synopsis of Subjects.

The causes of disease.
Symptoms of disease.
General treatment of disease.
Nomenclature of disease.
Classification of disease.
Fevers—their history, causes, symptoms, treatment.
Epizootic diseases—their causes, history, distribution, methods of spread — incubation — symptoms, treatment, and post-mortem appearances.

Specific diseases.
Blood diseases.
Diseases of the cerebro-spinal system.
Diseases of the respiratory organs.
Diseases of the digestive organs.
Diseases of the circulatory organs.
Diseases of the urinary organs.
Diseases of the generative organs.
Diseases of the cutaneous system.
Meat inspection.

(Written, three hours. Oral, one hour.)

PRINCIPLES AND PRACTICE OF VETERINARY SURGERY.

(Exclusive of Morbid Anatomy and Pathology.)

Synopsis of Subjects.

Pathological conditions—
- Inflammation.
- Suppuration.
- Abscess.
- Ulceration.
- Gangrene.

Injuries—
- Wounds—Incised, punctured, lacerated, fistulous.
- Contusions.
- Burns and scalds.
- Hæmorrhage.
- Sprain.

Tumours.
Injuries and diseases of—
- Bones, joints, muscles and tendons, arteries, veins, nerves, bursæ, lymphatics, skin.

Injuries and diseases of regions—
- Skull, face, ear, eye, tongue, teeth, pharynx, larynx, œsophagus, trachea, neck, withers, back, tail, chest, abdomen, pelvis, limbs, genital organs, internal organs.

Examination as to soundness.
Operations.
Obstetrics.

(Written, three hours. Oral, one hour.)

CHOICE OF A COLLEGE.

THE next step to be considered is the choice of a school at which to study. Of these there are five, viz., the Royal Veterinary College, London, the Veterinary School of the Liverpool University, the Royal Veterinary College, Edinburgh, the Glasgow Veterinary College, and the Royal Veterinary College of Ireland, Dublin. We have no intention of recommending one school above another, and to a great extent the student must be left to judge for himself. Locality, no doubt, will be the chief deciding point, as an Irishman would hardly go to Edinburgh when there is a college in Dublin. Fees are pretty much the same and the cost of living depends largely upon the individual himself.

THE ROYAL VETERINARY COLLEGE, LONDON.[1]

FOUNDED by a Frenchman, M. Vial de Saint Bel, in 1791, the London Veterinary College is the oldest institution of its kind in the British Isles. Until that year veterinary science, although it had made a very fair start on the Continent, could hardly be said to exist in England. The attention paid to sick or wounded animals was of a very crude kind, and came either from a few of the medical men of the day, or from the so-called farrier and cow-leech. To M. Saint Bel must be given the credit of inaugurating a new era of things whereby the science and art of veterinary medicine and surgery was put upon a sure foundation, and benefits innumerable have been dealt out to the suffering animal creation, in addition to enormous pecuniary saving to the pockets of the agricultural and animal-owning community.

Established in Camden Town, in a situation which was then surrounded by fields and on the outskirts of London, the College is most conveniently placed for access to any part of the city or the provinces, and many students take advantage of this to live some little distance away, although convenient apartments are always to be had in the immediate neighbourhood. The premises themselves are spread over a large area and are very extensive, including special class rooms or lecture theatres for anatomy, chemistry, histology, botany, pharmacy, and every branch pertaining to the teaching of veterinary medicine and surgery, whilst the dissecting rooms, post-mortem house, and pathological research laboratories, are equipped with every modern contrivance for aiding research.

The hospital gives accommodation for nearly one hundred in-patients at a time, whilst in the free out-patients' clinique several thousands of animals are treated each year, the operations, dispensing, &c., in this department being carried out entirely by the senior students under the careful supervision of the professor in charge aided by two or three assistants, all duly qualified members of the Royal College of Veterinary Surgeons. The operating bed, upon which horses and larger patients are cast, is under cover, and is sufficiently large to permit four or five operations to go on at the same time, whilst for canine work and for the surgery of the smaller animals like facilities are provided. On account of the number of animals brought for treatment to this free department, it has been found necessary to so divide it that the smaller varieties of patients are attended to in the morning, horses and larger varieties in the afternoon. All are supposed to belong to poor people, and advice, medicine, or surgical treatment is supplied gratuitously. As with the human hospitals, it is to be feared that the privilege is sometimes abused, and those who are able to pay a fee occasionally present themselves with their animals, but if detected they are sent away with the suggestion that they shall seek the advice of their local professional man. The students' pathological class room, laboratory, and museum, can compare favourable even with those of the State-aided Continental colleges, and the large lecture theatre, lighted by electricity, has every modern

[1] For the photographs illustrating this article we are indebted to Mr. C. S. Simpson, a Class D student.

convenience for the use of the lantern in demonstration work, and a seating accommodation for over 300 students.

The College is not endowed or State aided, and, except for a grant from the Royal Agricultural Society, is self-supporting, the expenses being met by the fees of the students and by the fees of subscribers; the latter, in return for an annual subscription, enjoy certain privileges, and are permitted to send animals for treatment at stated fees. The object of this list of subscribers is, in addition to the pecuniary benefit to the institution, to keep up a constant supply of in-patients for the benefit and observation of the students.

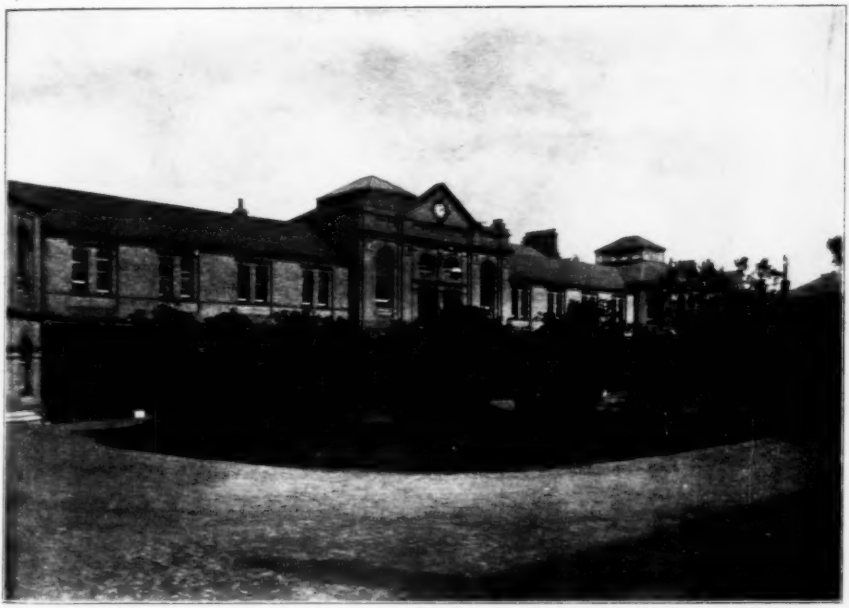

FIG. 1.—The main quadrangle, showing the Ride, the Library, the large Lecture Theatre, and Museum.

The Principal's residence is situated on one side of the main quadrangle, and apartments in other buildings are provided for a resident House Surgeon and one of the College Tutors. Both of the latter are selected annually from the recent graduates.

Occasional Students.

Occasional students are those who enter for one or more particular classes. Every class is open to such students on payment of the prescribed amount of the under-mentioned fees:—

Anatomy	...	...	...	...	...	8 guineas
Botany	...	...	...	...	...	3 "
Chemistry	...	...	...	...	...	5 "

Pathology	5	guineas.
Physiology	5	,,
Practical Chemistry	3	,,
Practical Histology	3	,,
Practical Pathology	5	,,
Surgery	5	,,
Veterinary Medicine	5	,,

Regular Students.

Each student before matriculation must produce a testimonial of good character, and, when admitted by the Dean, must subscribe his name to a declaration that he will conform to all such rules and regulations as may from time to time be made for the good government of the College under the sanction and authority of the Governors.

The educational or entrance fee of 80 guineas, which covers attendance on four years' course of instruction, may be paid in four instalments, all in advance, viz., 20 guineas on entry, 20 guineas at the end of the first year, 20 guineas at the end of the second year, and 20 guineas at the end of the third year. A fee of 1 guinea to the library and reading-room fund must also be paid prior to entry,[1] and a further fee of 10s. 6d. annually. A further fee of 20 guineas will have to be paid, in advance, for each year, or portion of a year, that a student is in attendance after the termination of the prescribed four years' course of instruction, but in the case of a student who, under certain conditions, cannot attend for another full session a fee of 10 guineas will cover attendance until the date of the next examination.[2]

All students entering the Royal Veterinary College are required to enrol their names and ages in the College register, and can forthwith commence their studies.[3]

Academical Course.

General Rules for all Matriculated Students.

Leave of absence from lectures or hospital practice can be obtained from the Dean alone, to whom, in case of sickness or other unavoidable cause of non-attendance, written notice is to be immediately sent.

The attendance of each student at lectures is regularly marked. At the close of each division of the winter session, and at the close of the summer session, the Dean prepares a report of the attendance, general character, and conduct of each student, which is forwarded

[1] The payment of this fee will confer the privilege of using the library and reading-room, and also, subject to election, of becoming a member of the Students' Medical Society.

[2] The fees cover attendance at all the courses of lectures and of clinical and practical instruction necessary to qualify for the diploma. The members of the College staff are prohibited from conducting private classes, and no additional fees are charged for such tutorial instruction as is considered necessary to supplement the regular courses of lectures.

[3] All students become on entry members of the Royal Veterinary College Athletic Club, the subscription to which is 5s. annually, and must be paid to the Secretary of the College.

to his parent or guardian, after being submitted to and signed by the Principal. A copy of these reports is kept for future reference.

The year is divided into two sessions. The winter session will consist of two terms, the first to include October, November, and part of December; and the second, January, February, and part of March. The summer session will include May, June, and part of July.

No one can be admitted into this College under the age of sixteen.

The days appointed for the celebration of the King's birthday and the Prince of Wales's birthday are kept as holidays.

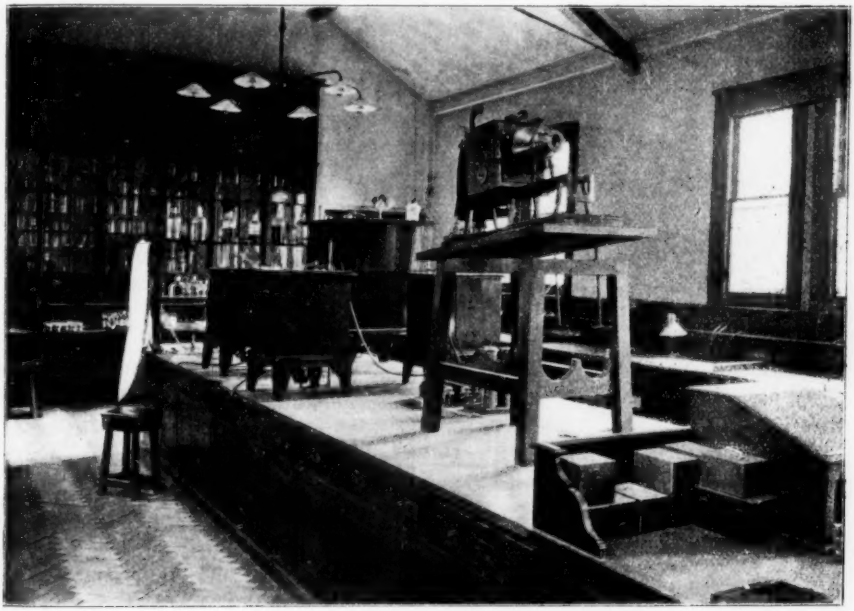

FIG. 2.—The Students' Pathological Laboratory.

The students of each class are examined monthly throughout the session; there are also prize examinations at the close of each summer session.

Lectures, demonstrations, and general instruction will be given during each sessional course of education on the following subjects, viz., to first-year students who are being prepared for the first examination—on chemistry, botany, including food, poisonous and medicinal plants, and on elementary anatomy and zoology.

To second-year students who are being prepared for the second examination—on anatomy, histology, physiology, stable management, and principles of shoeing.

To third-year students who are being prepared for the third

examination—on pathology and morbid anatomy, therapeutics, materia medica, toxicology, hygiene, and dietetics.

To fourth-year students who are being prepared for the fourth or final examination—on medicine, surgery, obstetrics, and meat inspection; also on the examination of horses for soundness and the writing of certificates thereon.

Tutorial classes, at which attendance is compulsory, are held at fixed hours by the teachers in each class.

Each student, provided he conforms to the bye-laws and regulations of the College, and conducts himself to the satisfaction of the Dean, shall be entitled to attend all the lectures and class demonstrations, including practical chemistry, and to receive daily instruction in the several branches of his professional education during the prescribed period of the four years without the payment of any additional fee, in accordance with the bye-laws and regulations of the College. He shall be subject, however, to any extra payments which may become due according to the provisions of either Rule 17 or Rule 19 (pp. 80 and 81 of the College Calendar).

ATTENDANCE AT LECTURES AND EXAMINATIONS.

(1) All students are required to be regular and punctual in attendance at the lectures and examinations of their respective departments. A register is kept of their attendance, and referred to whenever college certificates are required. No certificate of attendance upon any class will be given to any student who absents himself from an examination without permission.

Absence from College.

(2) Subject to the provision of Rule 4, absence of a student from lectures or examinations is not allowed, without previous permission from the Dean, except in the case of illness or sudden emergency. If a student is unavoidably absent without such permission from either of these causes, it is especially requested that immediate notice be sent by post addressed to the Dean by the student's parent or guardian if he be residing at home, or, if he be residing with one of the professors, by the professor with whom he resides. In case of such absence being due to illness, a medical certificate is expected.

(3) If a student be absent from the College without permission from the Dean, or without notice being sent to the Dean, a letter is addressed to the parent or guardian notifying the fact.

Intermission of Attendance.

(4) If a matriculated student after being absent for a term shall desire to resume his attendance, the Dean will require such certificates of good conduct as may be satisfactory to him before permitting such attendance.

General.

(5) It is assumed that each student will make himself familiar with the rules and regulations laid down for his guidance in the Calendar; and no student shall be entitled to any of the privileges or benefits of a matriculated student unless he shall have duly conformed to and observed such rules and regulations.

(6) Each professor, lecturer, or other officer of the College, will consider it his duty to report to the Dean any breach of discipline.

(7) If in the opinion of the Principal and the Governors (1) any student shall persistently violate any of the rules or regulations, or (2) the conduct of any student either within or without the precincts of the College or of the hospital shall be derogatory to his station in society or to the welfare or character of the College, either the Principal or the Governors may exclude him from attendance at the College and infirmary, or either of them, for any time, or may expel him from being a student and from all benefits thereof; but such a

FIG. 3.—The Physiological Laboratory.

sentence by the Principal alone shall be subject to an appeal to the Governors, who may thereupon make such order as they think fit; and no claim by or in respect of a student so excluded or expelled shall by reason thereof be made upon the Principal or College, or any person or thing connected therewith.

(8) Students who wish to remain at the College during the intervals between the sessions will be permitted to do so, for the purpose of acquiring practical information, without the payment of any additional fee.

(9) The College and school is open from 9 in the morning until 5 in the afternoon daily. The names of the students will be daily called

over at the several lectures and demonstrations. A return of the attendance of each is to be made to the Dean.

General Rule for all Occasional Students.

(10) Occasional students will be required to submit themselves to the discipline of the College, like other students, while within its precincts.

The Examinations.

(1) The examinations are held at two periods of the year, viz., in December and in July, and no student can present himself for either the first, second, third, or fourth examination until a certificate signed by the Principal, setting forth that he has been duly educated at the College, and is eligible for his first, second, third, or fourth examination (as the case may be), has been forwarded to the Secretary of the Royal College of Veterinary Surgeons.

(2) A student who discontinues his attendance at the College without a special arrangement having been made for such absence will forfeit the right of pupilage, and cannot return to the College and receive further educational instruction except on the payment of additional fees, the amount of which will be fixed from time to time by the Governing Body or General Purposes Committee.

(3) Absence on the part of a student from any of the lectures, demonstrations, or class instructions will, notwithstanding his attendance at others, be considered as absence from the College.

(4) A student, when rejected at either his first, second, third, or fourth examination by the Court of Examiners of the Royal College of Veterinary Surgeons, must, in order to obtain a certificate of eligibility for re-examination, conform without intermission during the interval between such rejection and the next ensuing examination by such court, to such regulations as to attendance at lectures, demonstrations, and instruction and otherwise as are prescribed for students during their first, second, third, or fourth period of study (as the case may be).

(5) A student rejected three times at his first, second, third, or fourth examination by the Court of Examiners of the Royal College of Veterinary Surgeons will forfeit his right of pupilage.

A disqualification for absence from the College by non-attendance at lectures, will on each occasion be considered as equivalent to a rejection.

A student when eligible for examination in either class must present himself unless prevented by illness or other sufficient cause, in which case he will be required to obtain special permission in writing from the Dean.

DUTIES OF STUDENTS AS CLINICAL CLERKS, ETC.

(1) Students who have passed their third examination by the Royal College of Veterinary Surgeons will be required to act in rotation as clinical clerks and dressers, unless exempted by the Dean.

(2) The duty of clinical clerks will be to note down the nature, symptoms, and treatment of the cases assigned to their charge, and also any other observations respecting them which may be thought

worthy of being recorded. They will also be required, under the direction of the dispenser, to take part in the daily dispensing of medicine for the infirmary patients, and with the dressers to aid the hospital or assisting hospital surgeon in giving such attention to each case as its necessities may require.

(3) Monitors not exceeding eight in number may be elected from among the students constituting the several classes at the commencement of the winter session, by competitive examination, conducted by the professors. Each monitor will be required to give

FIG. 4.—The Pharmacy.

general assistance to the professors and teachers in their respective departments, and to report to the Dean any breach of the bye-laws and regulations of the College on the part of any of the students.

(4) The prosectors, if thought desirable, will be selected from among the monitors, or otherwise from Class B as a whole, at the commencement of the winter session. Their duties will be superintended by the demonstrator.

Class Prizes and Certificates.

(1) On the nomination of the Dean and of each of the several professors, class medals will be given in each division of the student's education. They will be distributed to the students in the several

XUM

classes who have been selected for their industry, proficiency, and good conduct on their passing, as the case may be, either the first, second, third or fourth examination.

(2) Monitors and prosectors who have satisfactorily performed the duties of these offices respectively will be entitled on obtaining the diploma of the Royal College of Veterinary Surgeons to receive certificates of their having held such offices. Students who have distinguished themselves by good conduct and general proficiency during their pupilage will on obtaining the diploma of the Royal College of Veterinary Surgeons be entitled to a general certificate from the professors of attendance on their respective lectures; and other certificates of merit, medals and class prizes, will be awarded by the Governing Body or General Purposes Committee to deserving students, in accordance with the regulations.

(3) Certificates of distinction will also be granted to the students who have passed a superior examination for the diploma of the Royal College of Veterinary Surgeons, provided they have displayed industry, proficiency, and general good conduct during their pupilage.

(4) All certificates, medals, and prizes will be delivered to the students at the opening in October of the next winter session after they have been awarded or obtained.

Regulations as to Prizes and Exhibitions.

Centenary Prizes.

The Governing Body or General Purposes Committee will give annually four prizes of the value of £20 each, to be called "centenary prizes."

These prizes will be awarded to the most efficient student in each of the four classes as determined by a special examination held at the close of each year's course of instruction, together with the results of the monthly examinations held throughout the year.

No award of a prize will, however, be made until a report has been received from the Principal and professors having reference to the general good conduct of the selected students.

Clinical Prizes.

Three prizes of £5, £3, and £2 respectively will be awarded annually in each of the four classes, A, B, C, and D.

The subjects of examination for these prizes will be in :—

Class A :

(*a*) Taking of pulse, respiration, temperature.

(*b*) Manipulation and fastening of animals.

(*c*) Recognition of forage and poisonous plants.

Class B :

(*a* and *b*) Same as in class A.

(*c*) Lameness.

(*d*) Principles of shoeing, including putting on and taking off shoes, and recognition of defects in shoeing.

Class C :

(*a*) Surgical and medical diagnosis.

(*b*) Urine testing. Microscope in diagnosis.

(*c*) Recognition of defects in forage. Weighing of forage.

Class D:
(*a*) Clinical medicine.
(*b*) Clinical surgery.
(*c*) Pathological shoeing.

Ralli Prizes.

Three prizes of £5 5s., £3 3s., and £2 2s., presented by Mr. Stephen S. Ralli for proficiency in practical surgery, will be awarded annually.

The examination for these prizes will be held by the professor of surgery at the close of the summer session.

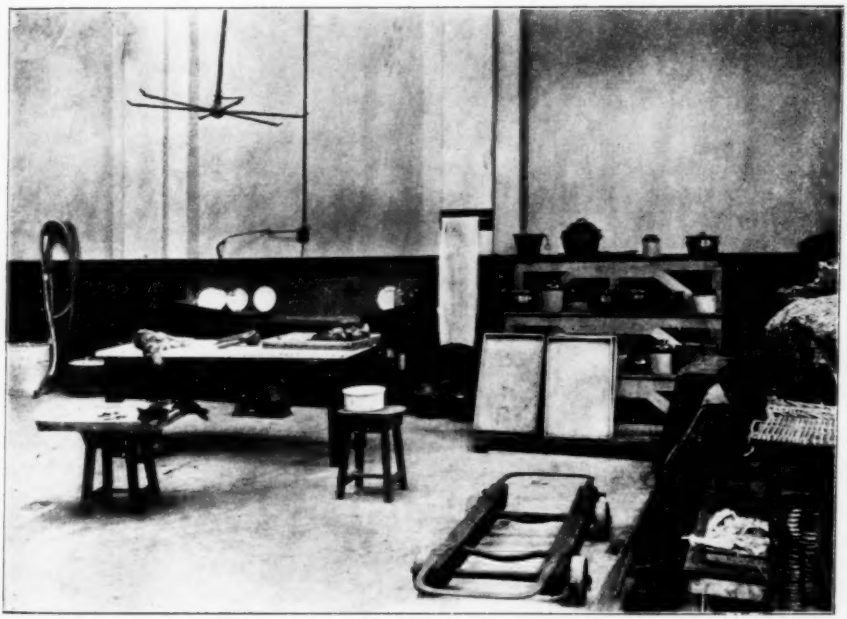

FIG. 5.—The Post-mortem Room.

Exhibitions.

The Governing Body, or General Purposes Committee, will also give annual exhibitions. Due notice will from time to time be given of the particulars of these exhibitions, and also of the number of students to be returned as eligible for competition for such exhibitions.

Royal Agricultural Society's Prizes.

The Royal Agricultural Society of England will award annually a silver and a bronze medal to the two students of the Royal Veterinary College who obtain the largest number of marks in a special examina-

tion to be held at the close of each session, and who at the immediately succeeding diet pass the final examination of the Royal College of Veterinary Surgeons.

All students of the College who have completed their course of study, and are eligible for the final examination of the Royal College of Veterinary Surgeons, can compete.

The subjects of the examination, which will comprise a written, an oral, and a practical examination, will be the diseases of cattle, sheep, and swine, and the dentition of these animals as an indication of age.

The examination will be conducted by the professors of the College.

Coleman Prize.

(1) This prize is given for essays on pathological and practical subjects relating to the foot of the horse, and the principles and practice of shoeing; the diseases of the horse's eye, and the disease known as glanders.

It consists of—first, a silver medal; second, a bronze medal; and third, certificates of degrees of merit.

(2) The Coleman prize will be competed for at the close of the summer term by students who have passed their third examination by the Royal College of Veterinary Surgeons, and whose term of study will be completed in time for the fourth or diploma examination of that college at the following July meeting of the Court of Examiners.

The essays must be delivered into the hands of the Dean on the expiration of the time fixed for the competition.

Each essay must have a motto affixed to it, and be accompanied by a sealed envelope containing the author's name, the motto of his essay being the superscription of the envelope.

The medals and certificates constituting the prize will be adjudged by the President, Vice-presidents, and Governors, on the report of the Principal and professors at the annual general meeting of the College next following on the student obtaining his diploma, and will be presented at the commencement of the ensuing winter session by the chairman of the meeting.

General Rule.

Good conduct and regular attendance upon lectures, examinations, and hospital practice, are indispensable for the admission of any student to be a candidate for a prize in this College, and all candidates must have complied with the general rules laid down in the Calendar for the guidance of matriculated students.

Regulations to be Observed in the Dissecting Room.

All dissections are to be carried out in the dissecting room of the College, which will be open daily from 9 a.m. to 4 p.m. during the winter session, except on Saturdays, when it will be closed at 1 p.m.

Order and decorum are to be strictly observed, and any breach of this regulation, or of any other which relates to the dissections, will subject the pupil to a withholding of the certificate of eligibility for his next examination by the Court of the Royal College of Veterinary Surgeons.

All dissections must be neatly and properly conducted, and when

this rule has not been observed the professor may require the student to perform a second dissection of the part.

The dissections will be under the immediate supervision of the professor of anatomy, who with the demonstrator will in each individual instance determine their extent, number, and kind.

The professor and demonstrator will practically assist the students in their dissections throughout the day.

The prosectors are to give such assistance as may be required by the professor or demonstrator in the preparation of all organs, structures, or parts which may be needed for the anatomical lectures or demonstrations.

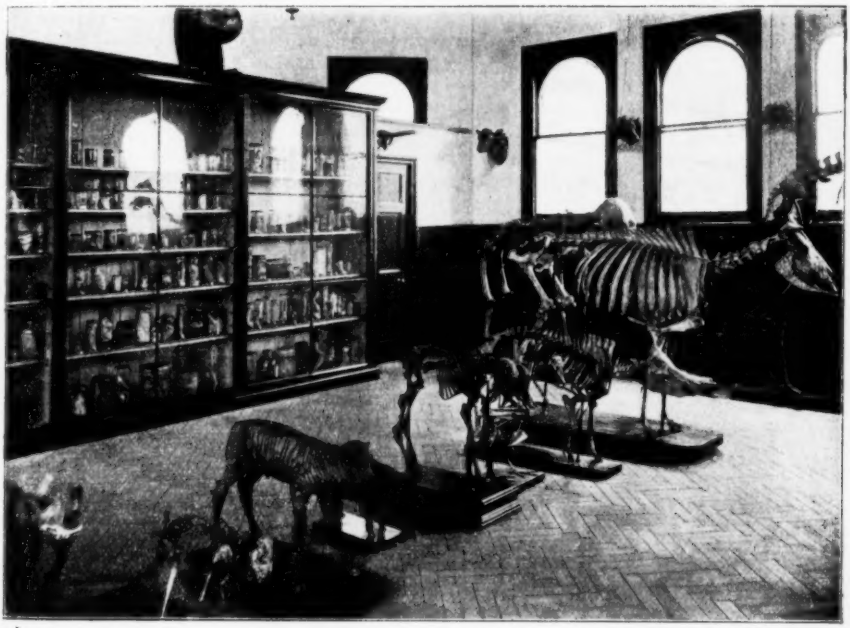

FIG. 6.—A corner of the Museum.

The names of the students engaged in dissection will be recorded daily for the purpose of being reported to the Dean.

HOSPITAL OR INFIRMARY SURGEON.

An assistant hospital or infirmary surgeon and two tutorial assistants to give daily assistance to the Dean and other officers in the infirmary are appointed from among the scholars, or exhibitioners, or other distinguished students of the College who have obtained the diploma of the Royal College of Veterinary Surgeons. They will hold the office for one year, or for such other period as the Governing Body

classes who have been selected for their industry, proficiency, and good conduct on their passing, as the case may be, either the first, second, third or fourth examination.

(2) Monitors and prosectors who have satisfactorily performed the duties of these offices respectively will be entitled on obtaining the diploma of the Royal College of Veterinary Surgeons to receive certificates of their having held such offices. Students who have distinguished themselves by good conduct and general proficiency during their pupilage will on obtaining the diploma of the Royal College of Veterinary Surgeons be entitled to a general certificate from the professors of attendance on their respective lectures; and other certificates of merit, medals and class prizes, will be awarded by the Governing Body or General Purposes Committee to deserving students, in accordance with the regulations.

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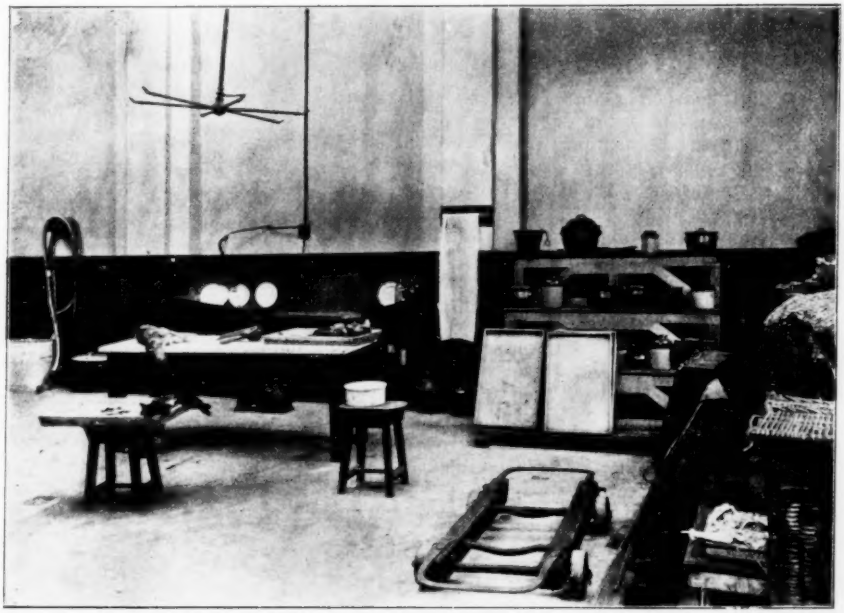

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The professor and demonstrator will practically assist the students in their dissections throughout the day.

The prosectors are to give such assistance as may be required by the professor or demonstrator in the preparation of all organs, structures, or parts which may be needed for the anatomical lectures or demonstrations.

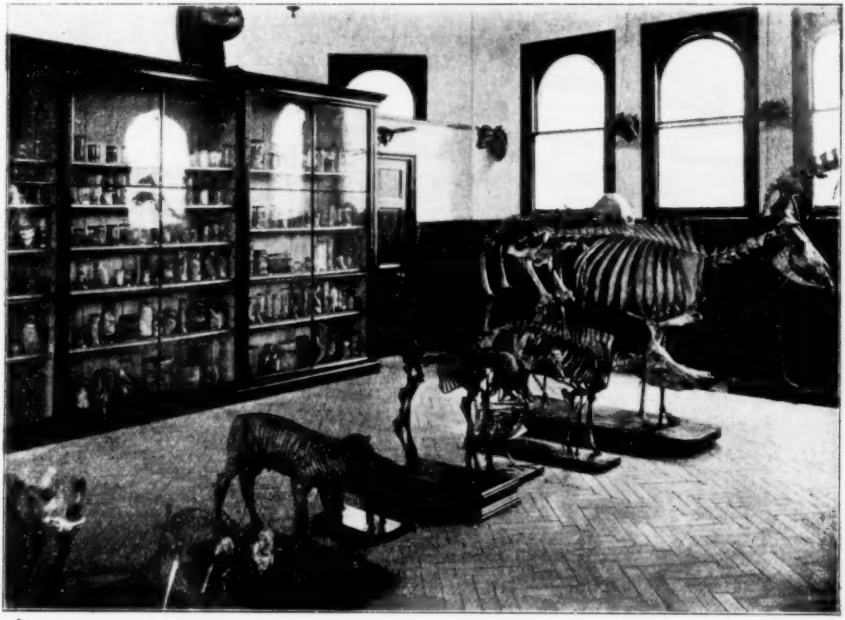


FIG. 6.—A corner of the Museum.

The names of the students engaged in dissection will be recorded daily for the purpose of being reported to the Dean.

HOSPITAL OR INFIRMARY SURGEON.

An assistant hospital or infirmary surgeon and two tutorial assistants to give daily assistance to the Dean and other officers in the infirmary are appointed from among the scholars, or exhibitioners, or other distinguished students of the College who have obtained the diploma of the Royal College of Veterinary Surgeons. They will hold the office for one year, or for such other period as the Governing Body

may determine; and may while holding the office have the privilege of residing within the College. At the termination of the period of office they will be entitled, on the recommendation of the Governing Body or the General Purposes Committee, by or through the Principal, to receive in addition to their salary a special certificate, which may be signed either by the President of the College, the chairman of the Governing Body, or chairman of the General Purposes Committee, and by the treasurer of the College.

Duties of Hospital Surgeon.

The assistant infirmary or hospital surgeon shall reside within the College, and shall give his entire services to the duties of his office, under the immediate direction and supervision of the Dean, or in his absence of one of the other professors or officers in attendance. He shall dispense all medicine under the directions of the Dean, to whom he shall be responsible for the safe custody of all drugs, chemicals, instruments, utensils, and pharmacy fittings; and shall see that all rules and regulations respecting the attendance of the students in the infirmary and in the pharmacy are strictly carried out. He shall not order any drugs, chemicals, or medicinal agents of any kind, but when such are required he shall report the same to the Dean.

Veterinary Medical Association.

The Association shall be privileged to hold its ordinary weekly meetings in the theatre of the College during the pleasure of the Governing Body or the General Purposes Committee, and on such day or days as shall be approved by the Governing Body or the General Purposes Committee. It shall have power to form rules and regulations for its own conduct; but all such rules and regulations, as well as all prizes, honorary certificates, and certificates of every other kind shall, prior to being awarded, granted, or enforced, be submitted to the Governing Body or the General Purposes Committee, for the purpose of ascertaining that they are in accordance with the provisions of the charter and the bye-laws of the College.

Membership of the Association shall be restricted to the professors, teachers, and students in the College.

The property of the Association is vested in the trustees for the time being; so that in the event of such disagreement arising between the members as to cause the removal of the Association from the College or its dissolution, the property and other effects shall remain within the walls of the College for the benefit of the students, or of any institution which may be formed under the sanction of the Governing Body or the General Purposes Committee.

The anatomical preparation for which a medal or certificate has been awarded by the Association shall become the property of the College, and be placed in the museum of the College, having inscribed on it the dissector's name.

Natural History and Veterinary Museum.

The museums comprise anatomy (healthy and morbid), materia medica, botany, chemistry, toxicology; also collections of diagrams for illustrating the lectures on these various subjects.

The pathological collection is very complete, and includes a large number of preparations, which are continually added to by the professors, old pupils, and other friends of the College. The materia medica collection is kept up to date.

The museum will be open to students at such times as may be arranged by the Dean.

The Dean will be happy to authorise the attendants to show the museums, during the hours that the College is open, to strangers presenting the card of any gentleman connected with the College.

LIBRARY.

The veterinary library contains a large number of standard medical works which the students have the opportunity of perusing in the library during the intervals between lectures, or of taking home for a limited period.

This library is open every day in the week from 10 to 5 (except on Saturday, when it closes at 1), for the use of matriculated students and of such occasional students as shall pay for admission thereto.

ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH.[1]

THE early history of the Edinburgh Veterinary College is practically the early history of the veterinary profession in Scotland, for, when William Dick, in 1819, started his life's work there were not more than a dozen properly qualified men practising as veterinary surgeons north of the Tweed and there was no means of obtaining a veterinary qualification, except in London.

At the age of twenty-six and after a comparatively short course of instruction at the London College, Dick started to deliver lectures in the Freemasons' Hall, Niddry Street, Edinburgh, in the year 1819. He appears to have soon changed the place of meeting of his class to a shop in Nicolson Street, where his audience was apparently none too large, for, we are told on reliable authority, it sometimes comprised but one student. In 1821 his lectures were delivered under the patronage of the Edinburgh School of Arts, but in the following year he conducted his class independently in the Calton Convening Rooms.

In 1823, Dick obtained the recognition of the Highland and Agricultural Society, and, about the same time, built a hospital and forge in Clyde Street, of which the present-day institution is the direct descendant. In 1827 a Board of Examiners was appointed by the Highland Society and their diploma constituted a license to practise the veterinary art. We are enabled to form some conception of what the original germ of the "Dick" College was from an exceedingly interesting letter which appeared in the *Veterinarian* in 1830. The writer describes the lecture-room as one "of no very great dimensions in an old and apparently long untenanted house in Clyde Street. You enter it from the street door and are immediately struck with the delightful confusion which seems to reign within. Skeletons of all descriptions, from a horse to an ape, not ranged in regular order 'all of a row,' but standing higgeldy-piggeldy, their ranks having

[1] For the photographs illustrating this article, and for various details, we are indebted to Professor O. Charnock Bradley, M.B., M.R.C.V.S., D.Sc.

been broken by the professor's table and their heads looking in all directions, as if thrown together by chance. Over the professor's 'devoted head' is seen suspended an inflated and injected intestine, with its mesenteric expansion dangling in the air, something like a lure for flies; whilst all round the room, and especially in the corners, are heaped together vast quantities of diseased bones and other preparations, seemingly without order and without arrangement . . . that portion of the house which is set apart for the audience . . . is fitted up with rough deal planks, set upon as rough props; the seats rising tier above tier, until your head touches the top of a very dark-coloured ceiling."

In 1833 this primitive building having become utterly inadequate for his purposes, Dick replaced it by a college costing him £2,500 for its erection. During his life-time frequent additions were made to it, and since his death the rapidly-increasing number of students compelled the trustees to make considerable additions and alterations. A very few years thereafter the accommodation again became inadequate, and the trustees determined to carry out a series of improvements and additions, which amounted practically to a complete reconstruction of the old premises.

The building of the new premises was begun in the spring of 1886 and completed in 1887.

The present buildings are arranged on four sides around a central covered courtyard or quadrangle. This covered courtyard serves for admission to the various sections of the premises.

The ground floor of the buildings is devoted almost entirely to hospital accommodation. The stalls, loose boxes, kennels, &c., are of the most approved sanitary construction, and in common with the other parts of the premises they are capable of being warmed by a system of hot-water pipes. This floor includes also, besides the Janitor's house and the College office, the pharmacy and the operating theatre. In the latter room the majority of the operations on animals are performed before the students, and the room is provided with appliances for fixing and casting the larger animals.

On the east side of the building the second storey is occupied entirely by the Anatomical department. The dissecting room is very extensive, and perfectly ventilated and lighted; with a view to cleanliness it is provided with an asphalte floor, and with the same object its walls are finished with silicate or glass paint. From the ground floor the dissection subjects are brought into the dissecting room by the aid of a hoist, and by means of mechanical appliances the heaviest subjects can with ease be transported to any part of the room. The room is also provided with apparatus for suspending horses in the natural posture while being dissected. This apparatus was invented and first employed in the Dick Veterinary College. Extending along one side of the dissecting room there is a gallery, to which access is obtained by a spiral iron staircase. This gallery is fitted up as a students' museum for the exhibition of dried and preserved specimens of the principal organs of the domesticated animals.

The anatomical class-room or theatre opens off the south end of the dissecting room. Into the theatre dissected subjects are wheeled from the dissecting room and transferred to a circular revolving table, so that the parts being lectured upon can be turned in succession to different aspects of the room.

Opening off this class-room there is a students' bone-room containing complete skeletons and disarticulated bones of domesticated animals.

The second storey on the north side is occupied mainly by the library and smoking-room. The library was instituted by the late Professor Dick, who bequeathed to it a large number of standard works on veterinary and kindred subjects, and valuable books of reference from his own library. The collection has also been enriched from time to time by gifts from former students and other benefactors of the College, and recent works and new editions are being annually added. All the works in the library are under the care of the College

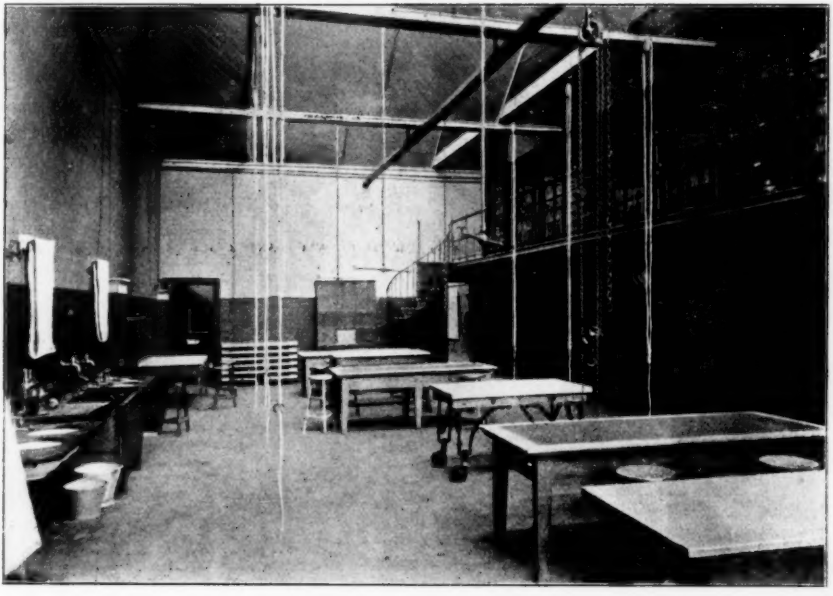


FIG. 1.—The Dissecting Room.

staff, and under proper regulations they are lent out to the students for consultation or for home reading. The reading-room is a spacious apartment fitted up with reading and writing desks, and supplied with a complete set of the most important veterinary and medical journals, arranged for consultation. It also contains a complete set of materia medica specimens and of medicinal and poisonous plants and grasses.

The second storey on the west side is occupied partly by the large general lecture hall, seated for two hundred students.

The new museum forms the entire second storey on the south side. It is divided into an anatomical and a pathological section, and is the most spacious and complete apartment of its kind in this country.

Over the museum are rooms fitted up for the carrying on of the

microscopical classes, which were first introduced into the veterinary curriculum at the Dick College; and the practical chemistry class-room, where the students are taught the elements of chemical analysis and manipulation.

On the north side, over the library and smoking-room, and forming the third and fourth storeys, there is the extensive chemical department, comprising lower and upper laboratories, besides other and smaller rooms devoted to chemical work.

Both laboratories are completely furnished with all appliances for the teaching of analytical chemistry and the prosecution of chemical research.

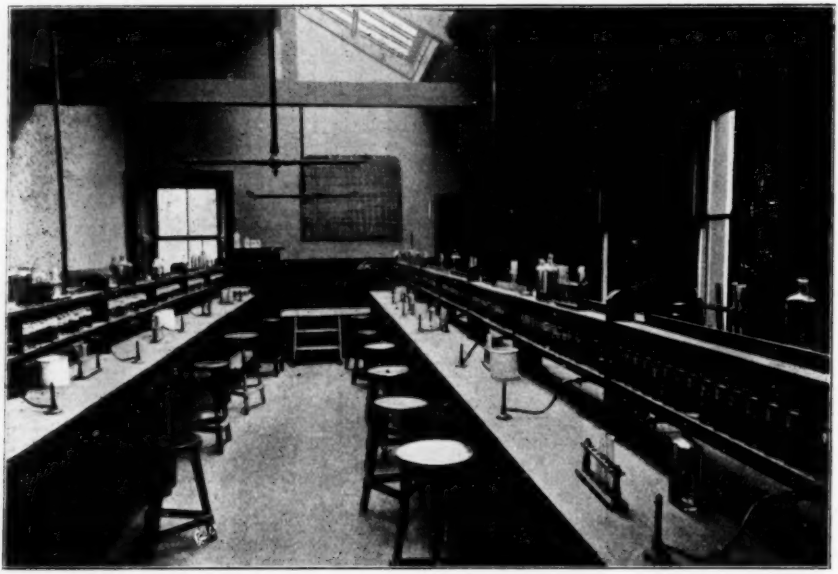


FIG. 2.—The Chemical Laboratory.

When the Royal Charter incorporating the veterinary profession was granted in 1844, the same rights and privileges were extended to the Edinburgh College as to the older institution in London.

For the first twenty-five years of his career as a teacher, Professor Dick conducted the College practically unassisted, except for such support as was extended to him, subsequent to 1827, by several teachers in the Edinburgh Medical School in the way of permitting Dick's students to attend their lectures. In 1844 it became evident that a College staff was essential, and Dick began to gather round him men who taught within the Clyde Street buildings.

On his death, in 1866, Professor Dick endowed the College which stands as a monument to his altruism, and bequeathed it in trust to

the Lord Provost, magistrates and Council of the city of Edinburgh, by whom the estate has been administered up to the present time. Nearly 1,500 graduates have successfully passed through this institution since its foundation.

Rules relating to Professional Studies and Examinations, Class Fees, &c.

The eighty-third session will commence the first week in October, 1905. An inaugural address will be delivered in the large Lecture Hall on the opening day at half-past two o'clock. The classes will rise for the Christmas holidays about the middle of December and will resume work early in January, and continue till the close of the session in May.

There is no summer session, but only one long winter session of thirty weeks. This arrangement of study is considered by some to be more economical and more advantageous to students, as it leaves them free during the rest of the year to see practice under the instruction of a veterinary surgeon.

Curriculum Fees for Professional Students.

Matriculation Fee.—A matriculation fee of one guinea is payable by all students entering College for the first time.

Class Fees.—The class fees for all subjects and for the full enjoyment of all the privileges of the College are as follows:—

	£	s.	d.
For students of Class A	17	17	0
,, ,, B	15	15	0
,, ,, C	13	13	0
,, ,, D	10	10	0
Students returning for a portion of Class D ...	5	5	0

Students who have attended other schools and who wish to take part of their course of study at this institution will be admitted on special terms, after due inquiry as to their qualifications.

All fees are payable in advance and must be paid by the students personally as they enrol, or directly remitted by their parents or guardians to the Principal.

The Carnegie Trust.

The Carnegie Trustees have agreed to pay the fees of students of the Royal (Dick) Veterinary College who come under the conditions mentioned in the following extract from a letter received from the secretary to the Carnegie Trust of date October 14th, 1901:—

"Three qualifications have been demanded: The applicant (1) must be over sixteen years of age; (2) must be of Scottish birth or extraction, or must have given two years' attendance after the age of fourteen at a school or institution under inspection of the Scotch Education Department; and (3) must be qualified by preliminary examination under the ordinances of the Scottish Universities Commission and the Regulations of the Joint Board of Examiners to attend the classes for which payment of fees has been claimed."

It is necessary to state here, for the information of those who are otherwise eligible to claim payment of fees under the Carnegie Trust,

that the aforementioned examination of the Educational Institute of Scotland *does not* satisfy these requirements.

The standard of examination at present prescribed by the Carnegie Trustees is that of the preliminary examination of the Faculties of Arts or of Science in any of the Scottish Universities. It is equivalent to the Higher Grade Leaving Certificates of the Scottish Education Department in English, mathematics, and French or German, and the Lower Grade Leaving Certificate in Latin. Candidates who take the Lower Grade Leaving Certificate in Greek do not require to take either French or German, and these leaving certificates will be accepted instead of a preliminary examination.

It would be well, therefore, for parents who purpose that their sons should study at this institution under the advantageous terms offered by the Carnegie Trustees to see that they are studying for these certificates or being prepared for the preliminary examination during the last few years they are attending school.

Occasional Students.

Non-professional students may enter the College without passing a general knowledge examination on payment of the matriculation fee of one guinea, and may have separate tickets for one or more classes at the following fees:—

Class Fees.

	£	s.	d.
Veterinary medicine	5	5	0
Meat inspection	2	2	0
Veterinary surgery	5	5	0
Obstetrics	3	3	0
Clinical instruction	5	5	0
Anatomy (senior)	5	5	0
Anatomy (junior)	4	4	0
Physiology	4	4	0
Histology	4	4	0
Materia Medica	3	3	0
Pharmacy	1	1	0
Toxicology	1	1	0
Chemistry (theoretical)	4	4	0
Chemistry (practical)...	3	3	0
Pathology and bacteriology	5	5	0
Hygiene and dietetics	3	3	0
Stable management	3	3	0
Botany	3	3	0
Zoology	3	3	0

These classes are recognised by the University of Edinburgh as qualifying (*pro tanto*) for the degree of Bachelor of Science in Agriculture, and the chemistry class qualifies also for medical and science degrees.

Agricultural Classes.

The agricultural course of the college has now been incorporated in that of the Edinburgh and East of Scotland College of Agriculture.

The classes of the College are held at the University of Edinburgh, the Heriot-Watt College, the Royal Botanic Garden and the Royal (Dick) Veterinary College.

Full information regarding this course may be had on application to the Principal.

Regulations as regards Attendance.

Each student must, on entering, sign a declaration in the following terms :—

"I, , now entering the Royal Dick Veterinary College as a student, do hereby declare that as long as I continue to be a

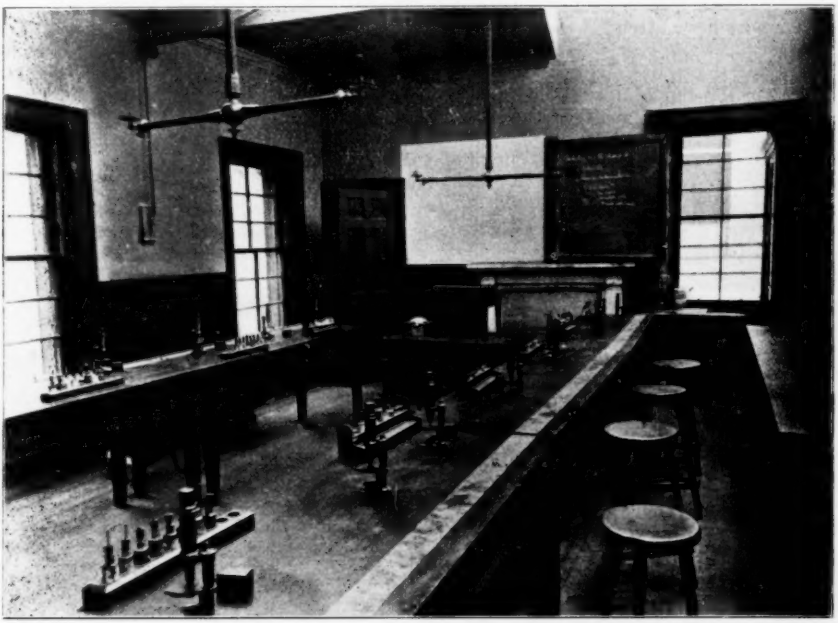


Fig. 3.—The Students Pathological Laboratory.

student of the College I shall be regular in my attendance at the proper classes and diligent in my studies, and conduct myself with propriety and decorum, and shall at all times be obedient to the professors and lecturers, and observe and conform to all the rules and regulations of the College which may be from time to time made by the College Council. Further, I agree that I shall have no claim for repayment of any fees on any ground whatever, and I also agree that the College Council shall be entitled to expel me from the College or suspend my course if, in their opinion, I shall have infringed this declaration."

XUM

The College Council have the right of refusing to admit any intending student without assigning any reason, if, in their opinion, it is for the interest of the College that he should not be admitted; and of refusing to readmit any student who during a previous term has, in their opinion, infringed the declaration signed by him as aforesaid.

Regularity of attendance on the various classes is strictly enforced. In each class the roll is called regularly, and at the close of the session a certificate may be obtained giving a record of attendances.

A certificate of attendance upon the requisite classes is required by the Royal College of Veterinary Surgeons of all students going up for professional examinations.

Such qualifying certificates will only be granted to those students who have attended their classes with regularity.

Note.—The attendance of a student is not recognised until all his fees have been paid.

Throughout the session periodic examinations in each class are held by the professors, in order to ascertain the progress made by students and their state of fitness to present themselves for professional examinations.

Attendance at these examinations is obligatory.

If desired, the Principal will supply parents or guardians at any time during the course of the session with information as to the attendance, rate of progress and general conduct of any student.

Veterinary Medical Association.

The association is designated "The Edinburgh Veterinary Medical Association," and all matriculated students of the College are *ipso facto* members of it.

Its object is to promote the diffusion of veterinary knowledge among the members and to enable them to acquire accuracy and fluency in the expression of their opinions.

For this purpose the members read and defend essays of their own composition upon veterinary subjects and bring forward communications regarding clinical cases which have been under their care or observation outside the College.

The work of the association is carried on under the direction and supervision of the College Council. The Principal of the College is *ex officio* president, the other professors are vice-presidents, and a secretary is annually elected by the members.

A certificate of membership is awarded to each student—who has conformed to the rules of the association and attended the meetings satisfactorily—on completing his professional studies and obtaining the diploma of the Royal College of Veterinary Surgeons.

A diploma of fellowship—F.E.V.M.A.—is also awarded to those members who, during their college career, have read and defended papers of sufficient merit to obtain the approval of the College staff.

A silver medal for the best essay and a silver medal for the best communication are awarded to graduates at the close of each winter session.

The meetings of the association are held weekly, or as often as required, in the Lecture Hall of the College, under the presidency of the professors.

HONOURS, MEDALS, CERTIFICATES, &C.

All professional students are eligible to compete for the following :—

(1) A bursary of twenty guineas and certificate will be awarded to the student entering in the autumn of 1904 and qualifying in May, 1908, who obtains the highest proportion of marks in the various class competitions throughout the entire curriculum.

(2) Gold medals :—

The "Cranston" gold medal (Chemistry).

The "Anderson" gold medal (Anatomy).

The "Turnbull" gold medal (Physiology).

The "Dryborough" gold medal (Veterinary Medicine).

The "Harris" gold medal (Pathology and Bacteriology).

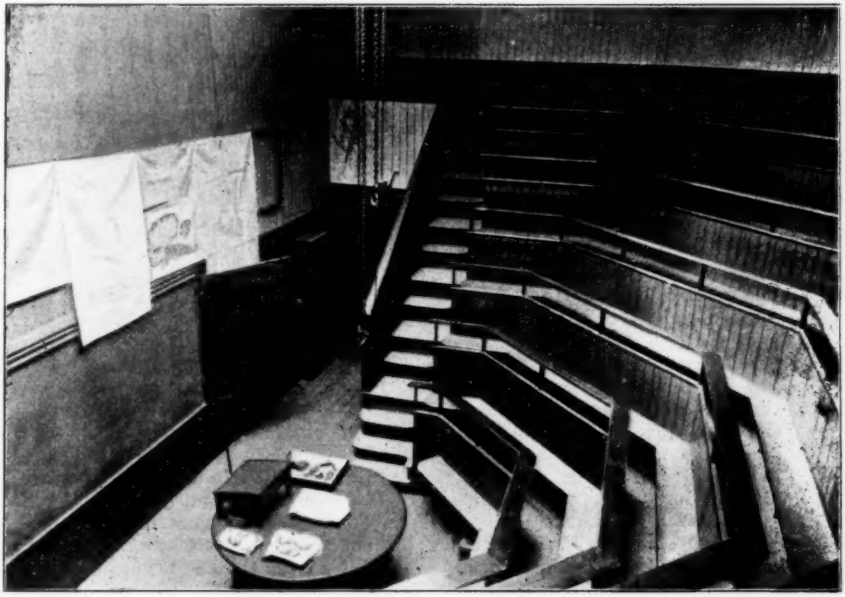


FIG. 4.—The Anatomical Lecture Theatre.

The "Dollar" gold medal in Veterinary Surgery.

(3) Silver medals.

The following class medals, most of which are given annually to this College by the Highland and Agricultural Society of Scotland, viz. :—

Class A.—Chemistry (H. & A. S.); Biology (H. & A. S.); Junior Anatomy (H. & A. S.).

Class B.—Senior Anatomy (H. & A. S.); Practical Anatomy;[1] Physiology (H. & A. S.); Stable Management (H. & A. S.).

[1] This medal is presented by Professor O. Charnock Bradley.

Class C.—Materia Medica (H. & A. S.); Pathology (H. & A. S.); Practical Pathology;[1] Hygiene (H. & A. S.).

Class D.—Surgery (H. & A. S.); Obstetrics; Veterinary Medicine (H. & A. S.).

(4) A special medal will be given for the best examination in Clinique.

(5) Macfarlane medal, presented by A. M. Macfarlane, Esq., M.R.C.V.S., Malta, for the best examination made by a student of the final year.

(6) In addition to the foregoing gold and silver medals, bronze medals, in the proportion of one to every thirty students competing, will be awarded in the following classes: Biology, Chemistry, Practical Chemistry, Senior and Junior Anatomy, Histology, Pathology, Obstetrics, Veterinary Medicine, Surgery, Physiology, Materia Medica, Clinique, Hygiene, and Stable Management.

(7) At the close of his studies each successful candidate for the diploma will receive a Collective College Certificate, signed by all the professors.

The College is, at the time of writing, on the eve of not the least important phase of its existence. The administration and management of the College is about to be transferred to a Board consisting of representatives elected by the Town Council of Edinburgh, the University of Edinburgh, the veterinary profession in Scotland, the Highland and Agricultural Society, and other agricultural bodies. By the munificence of Mr. Alexander Inglis MacCallum, M.R.C.V.S., its coffers are to be enriched to the extent of £15,000; and the trustees of the late Miss Mary Dick, sister of Professor Dick, are to hand over a moiety of the residue of her estate, now amounting to some £11,500. These sums will be partly expended in the endowment of the chairs of Pathology and Physiology.

In addition, the University of Edinburgh has drawn up an ordinance, now awaiting the royal assent, for the granting of degrees after advanced study to those who have obtained the diploma of membership of the Royal College of Veterinary Surgeons; and Miss Dick's trustees are about to pay over to the University Court the second moiety of the residue of her estate to found a chair or lectureship, to be called "The Barclay and Goodsir Chair of Comparative Anatomy," the teaching in connection with which will be adjusted to suit the requirements of the students of the Dick College.

By means of the new arrangements the Edinburgh College will be placed in a position to continue to keep in the fore-front of modern educational advancements, and so further that progress of the veterinary profession in Scotland which was the single-hearted wish and endeavour of its founder, William Dick.

[1] This medal is presented by Dr. Gerald Leighton.

THE UNIVERSITY OF LIVERPOOL VETERINARY SCHOOL.

A VETERINARY school has recently been established in connection with the University of Liverpool, and there are already about sixty students attending the classes there. The scheme to establish a Veterinary Faculty in connection with the University has really been talked of for about ten years, but the idea did not take practical shape until some two years ago, when the Principal of the new Veterinary College in Edinburgh was induced to transfer his school *en bloc* to the new Lancashire University at Liverpool. Steps were taken to secure the necessary affiliation with the Royal College of Veterinary Surgeons and the new school started work under very favourable auspices. The subjects taught are the same as at the other veterinary colleges, and a special lectureship has been founded for the subject of Canine Medicine and Surgery.

The buildings especially devoted to the veterinary students are within the University precincts, the lectures on botany, zoology, chemistry, physiology, materia medica and pathology being taken in conjunction with those given to the students of human medicine, whilst the clinical instruction is obtained outside the school in the clinic of practitioners in the city who have been appointed extra-mural lecturers or demonstrators.

The students have free access, along with those of other faculties, to the various museums, libraries and clubs.

The Veterinary School forms part of the University. The Corporation and other Veterinary hospitals for the clinical instruction lie within a few minutes' walk of the University. The public abattoirs for instruction in meat inspection are within two minutes of the University.

SCHOOL OF HYGIENE.

The building known as Ashton Hall is devoted to the study of hygiene. It includes a large lecture hall, laboratories and work-rooms, and a museum of hygiene. The classes held in the building are: Lectures in hygiene for veterinary students, classes for the diploma in veterinary hygiene and classes for the Sanitary Inspectors' certificates of the Liverpool University and the Sanitary Institute.

MUSEUMS AND LABORATORIES.

The Anatomical Museum adjoins the dissecting room and is intended to assist students in the study of anatomy.

The Museum of Zoology and Comparative Anatomy is in the Zoological Department, and in addition to the collections of vertebrate and invertebrate animals used for illustration of the lectures and displayed for the instruction of students, it contains a "Fisheries Collection," a "Local Collection," a Geological Collection and a small Anthropological Collection.

The Museum of Botany is contained in the new Hartley Laboratories, and comprises a complete teaching collection.

The Museum of Materia Medica, placed in the Medical School, comprises collections which are freely accessible to students during University hours. The collection has recently been rearranged and greatly extended.

XUM

FIG. 1.—Histology Class Room.

The Museum of Hygiene is in connection with the School of Hygiene. It contains very many valuable meteorological instruments, models and specimens, illustrative of sanitary work, good and bad. Additions are being constantly made to the collection.

The Museum is open free to the public daily from 10 a.m. to 5 p.m., and on Monday and Wednesday evenings.

The Laboratory of Comparative Pathology was opened, together with the Tropical, Bio-Chemical and Cancer Research Departments, by the Right Hon. Walter Long, M.P., in May, 1903, and is very fully equipped for teaching and advanced research work.

The Bacteriological Laboratory. This forms a large department, in which there are special rooms for teaching and research, the making of media and preparation of vaccines and sera.

The Comparative Pathology Museum. This museum has rapidly grown and now contains 2,000 carefully selected specimens for illustrating the principal diseases of animals.

The Collection of Animal Parasites and Biting Insects. A very representative collection has been obtained from different parts of the world of the biting flies, fleas and ticks associated with the transmission of disease. There is also a very large collection of intestinal, blood and other parasites prepared and classified by Dr. Loos, of Cairo.

The Veterinary Library. There is a special departmental library available to the students, which contains the chief current English and foreign literature.

Serum Institute and Farm Station. This department has been established for the investigation and production of curative vaccines and sera, and students become practically acquainted with the methods of immunisation and the preparation of vaccines and sera. The farm is provided with laboratories and very large stable accommodation.

The Laboratories of Physiology, Zoology, Botany, Chemistry and Physics form large independent blocks in the University. Each one contains its own class and research rooms, theatres and museums.

In the Tropical School and Cancer Research Departments there is abundant material available to veterinary students for research and investigation, and there is always a large stock of animals affected with the more important tropical diseases.

Extensive laboratories of zoology and comparative anatomy are now in course of erection, and they include a very large museum to accommodate the collection of zoological specimens possessed by the department.

Edinburgh Veterinary Medical Society and Library.

Founded by the late Professor Dick in 1834 and transferred to Liverpool.

The students are recommended to join this society. The books, of which there is a large number, may be consulted in the library, and are lent out to members according to the laws of the society. All veterinary students are eligible for admission, which is by ballot. The society meets once a week, or oftener if necessary, at 7.0 p.m. for business, hearing cases of interest described, and for reading and discussing essays on veterinary subjects.

The society presents annually two silver medals—one for the best essay and one for the best communication.

XUM

University Athletic Club.

The Athletic Club has the great advantage of the permanent use of a field placed at its disposal by Mr. Chas. W. Jones, Field House, close to Sefton Park Station. It possesses tennis courts, cricket pitches, football grounds and a small pavilion. A man is in constant attendance to keep the ground in order and a pavilion and dressing-rooms are provided near the ground. Matches are arranged with other clubs. A room for boxing and fencing has been set apart for the use of members at the University. The athletic sports are held annually in May. All information can be obtained from the president, the treasurer, or the honorary secretary.

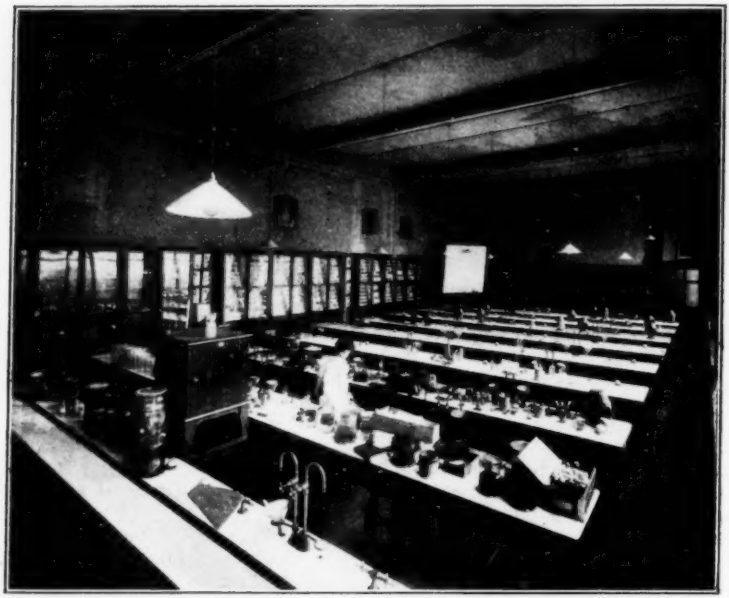


Fig. 2.—Pathology Class Room.

Hall of Residence,

In connection with the Liverpool School of Tropical Medicine, 44, Upper Parliament Street.

Several rooms are available for students.

Terms.—Board and residence, £1 per week, inclusive (for a period of not less than two months); £1 5s. for shorter periods.

Application should be made to the Warden, Mr. Ward, at the Hall (1 p.m. to 2 p.m., or after 5 p.m.).

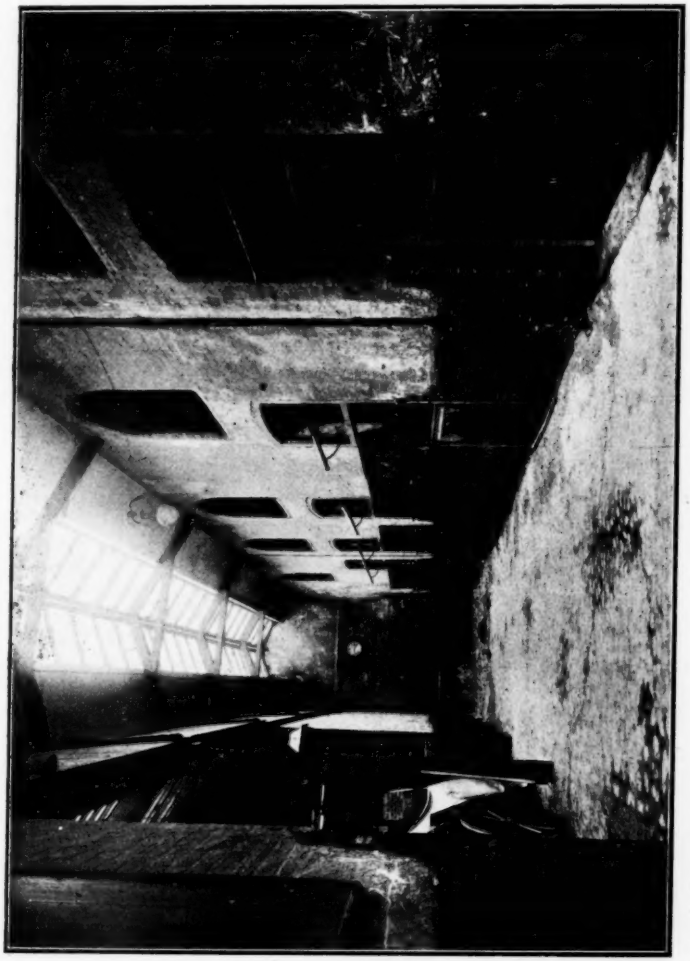


FIG. 3.—An Equine Ward.

Fees.

The fees for the four years' lectures and all other instruction are seventy-two guineas, which may be paid in four instalments of eighteen guineas. The first instalment must be paid prior to entry, and with each instalment a registration fee.

Every candidate for admission must have attained the age of sixteen years, and must produce a certificate of good character from his last instructor, or such other evidence as shall satisfy the Vice-Chancellor.

Regulations (General).

(1) Every student is required, at the time of admission, to sign a declaration of obedience to the statutes and regulations of the University for the time being.

(2) All students must enrol themselves on the register not later than one week after the commencement of term. No student will be permitted to commence attendance at any course of lectures after this date, unless able to furnish to the Senate satisfactory reasons for having failed to do so earlier.

(3) The library, reading-rooms, common rooms, cloak-rooms, and refectory are open to students under such regulations as shall be from time to time issued by the Senate.

(4) Students will be required to make good, to the satisfaction of the Senate, any loss, wilful damage, or injury they may occasion to any property of the University.

(5) Smoking within the precincts of the University is strictly forbidden.

(6) Students may be excluded for misconduct from any part of the University or its precincts.

(7) No allowance will be made, nor will the fee paid be returned, for any portion of the curriculum that a student may forfeit by irregularity of attendance or misconduct, and any wilful violation of these or other rules which may from time to time be issued by the Senate may subject the offender to removal from the University, and to the forfeiture of all fees and privileges as a student of the University.

Lectures.

(1) A card of admission to the several classes is issued at the Registrar's office, on payment of the prescribed fees. This card must be submitted to the professor or lecturer conducting the class, to be countersigned by him, and will entitle the student to attend the class.

(2) Any student unavoidably absent from lecture is expected to communicate the cause of absence to the professor or lecturer conducting the class. Every student must present himself at the terminal class examination, unless expressly excused by the Dean of the Faculty.

Each student is required to pay the sum of fifteen shillings per annum as subscription to the Guild of Undergraduates, which includes: (1) membership of the athletic section; (2) membership of the debates section; (3) membership of the reading-rooms; (4) a copy of the *Sphinx* monthly.

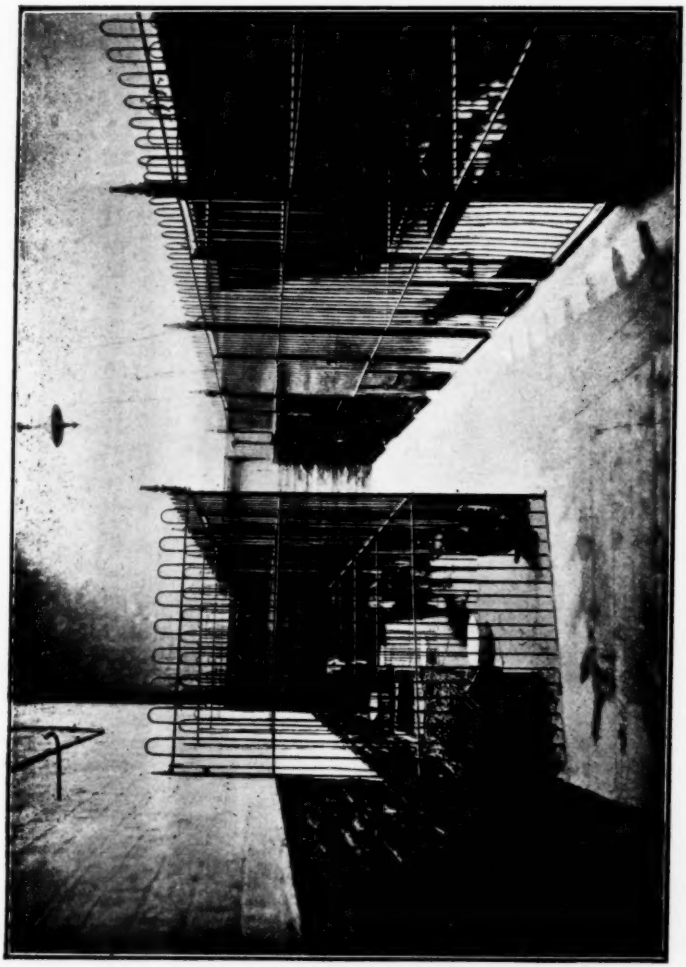


FIG. 4.—A Canine Ward.

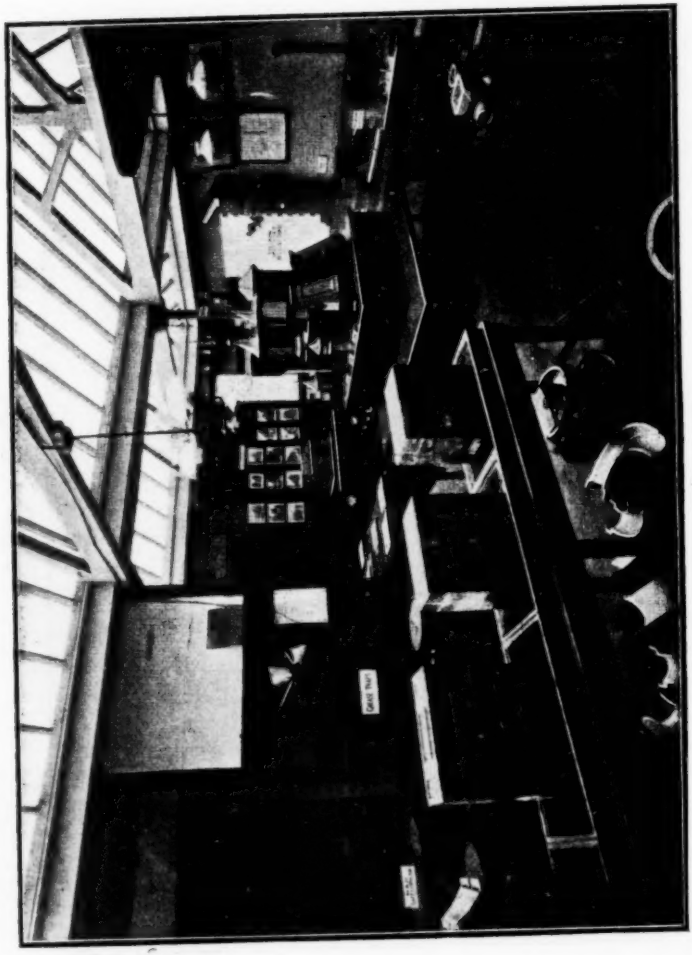


Fig. 5.—Museum of Hygiene.

PRIZE LIST.

The Royal Lancashire Agricultural Society has generously given a number of gold and silver medals to be competed for in the various classes in the University of Liverpool Veterinary School.

Gold medal to the student who passes the best First Professional Examination.

Gold medal to the student who passes the best Second Professional Examination.

Gold medal to the student who passes the best Third Professional Examination.

Gold medal to the student who passes the best Fourth Professional Examination.

Principles and practice of veterinary medicine ...	Silver medal
Principles and practice of veterinary surgery ...	,,
Meat inspection	,,
Comparative pathology and bacteriology	,,
Veterinary hygiene	,,
Materia medica	,,
Physiology	,,
Senior anatomy	,,
Stable management	,,
Biology	,,
Chemistry	,,
Junior anatomy	,,

N.B.—No student rejected in any one of the Professional examinations is eligible to compete for the medals in that class.

These medals will be awarded to the candidate obtaining the highest aggregate marks (not less than 65 per cent.) in the class terminal examinations.

William Johnston, Esq., of the Johnston Line, has generously given for educational purposes two first-class passages out to Baltimore to two selected students, who will be required to return on one of the Johnston steamships in charge of a cargo of live cattle.

THE GLASGOW VETERINARY COLLEGE.

Two years ago two of the existing veterinary colleges in Great Britain (the New Veterinary College in Edinburgh and the Glasgow Veterinary College) were conducted entirely by private enterprise and effort. Since the removal of the Edinburgh School to Liverpool and its affiliation with the University, the Glasgow College stands alone in this respect. Its origin and success has been due to the untiring energy of one man, its present enthusiastic Principal, Professor J. McCall, who originally occupied the Chair of Anatomy under Professor Dick in the Royal Veterinary College, Edinburgh. Resigning his position there in 1859, Professor McCall started practice in Hope Street, Glasgow, where a number of the Edinburgh students followed him, and induced him to give a course of lectures. From this small

beginning the Glasgow Veterinary College commenced, and in 1863 its affiliation with the Royal College of Veterinary Surgeons as a recognised teaching school was an accomplished fact.

The first lecture rooms were in Sauchiehall Lane, later on in Parliamentary Road, and eventually, as things grew, Professor McCall acquired the buildings in Buccleuch Street, where the present college stands. Starting originally with half a dozen students, the numbers have been as high as 150, and at the present time there are about seventy.

The buildings include a museum, chemical, botanical, pathological and other lecture rooms, with loose boxes and kennels for in-patients, whilst the students are also taken to visit studs and farms in the outside private practice which Professor McCall has acquired, in addition to the various Government and Port Inspectorships which he holds.

The out-door practice is a large and varied one, and includes daily attendance on several of the largest studs in the city, the inspection of the live stock markets, and of home and foreign steamers carrying live animals. There is also in connection with the College the grazing and cropping farms of Woodend and Shawend, Kilsyth, devoted to the breeding of Clydesdale horses, cross-bred cattle and sheep, and to which horses temporarily disabled for work are taken.

The class certificates of this College qualify for examination for the diploma of the Royal College of Veterinary Surgeons, for appointments in the Army and Government Inspectorships in England, Scotland, and Ireland.

The first Wednesday in October is fixed by statute as the commencement of each sessional year.

Fees and Regulations.

(1) The educational or entrance fee for attendance on all classes and lectures specified in the prospectus, including clinical instruction and registration, during the prescribed four years' course of instruction is £60, payable at commencement of College career, or in the following proportions in advance :—

For the first year	£18	18	0
„ second year	17	17	0
„ third year	15	15	0
„ fourth year	10	10	0

A further fee of 5 guineas will be charged for each session or part of a session that a student is in attendance after the termination of the prescribed four years' course of instruction.

All fees are payable in advance, and parents and guardians are requested to pay by cheque or post-office order during the first week of the session.

Professional students ere also required to become members of the "Veterinary Medical Association," established in connection with the College. The fee is 1 guinea, also payable at the time the student is enrolled.

Amateur students are not required to undergo a matriculation examination. They may have single class tickets for the winter session as follows :—Veterinary medicine and surgery, £5 5s.; clinical

instruction, £5 5s.; anatomy, £4 4s.; physiology, £4 4s.; chemistry, theoretical and practical, £7 7s.; veterinary hygiene, £3 3s. These classes are recognised by the Universities of Glasgow and Edinburgh as qualifying (*pro tanto*) for the degree of Bachelor of Science in Agriculture.

ACADEMICAL COURSE.

(2) The academic year is divided into three terms of ten weeks each. The winter session commences on the first Wednesday in October. The classes will rise for the Christmas holidays about December 20th, and resume about January 6th, and continue until the close of the session, about the end of May.

Students may join at the commencement of the session in October, or after the Christmas vacation; but when the choice is optional October is much to the student's advantage.

(3) Each student, provided he conforms to the bye-laws and regulations of the College, and conducts himself to the satisfaction of the Principal, shall be entitled to attend all the lectures and class demonstrations, including practical chemistry, and to receive daily instruction in the several branches of his professional education during the prescribed period of the four sessions, without the payment of any additional fee, in accordance with the bye-laws and regulations of the College. He shall be subject, however, to any extra payments which may become due according to the provisions made in the College Calendar.

(4) The time of attendance for the students is from 9 in the morning until 4 in the afternoon daily, subject to special or occasional exemptions to be granted by the Principal. An accurate record of the attendance of each student and of the above exemptions will be kept, and for this purpose the names of the students will be daily called at the several lectures and demonstrations. A return of the attendance of each is to be made to the Principal by the several professors and teachers.

(5) Students are required to take their places in the class-room or laboratory prior to the time specified for the commencement of each lecture or demonstration, and to preserve throughout a strict propriety of conduct. Any violation of this regulation will render a student liable to the withholding of his certificate of eligibility for the next ensuing examination by the Royal College of Veterinary Surgeons.

(6) The examinations are held at two periods of the year, viz., December and May.

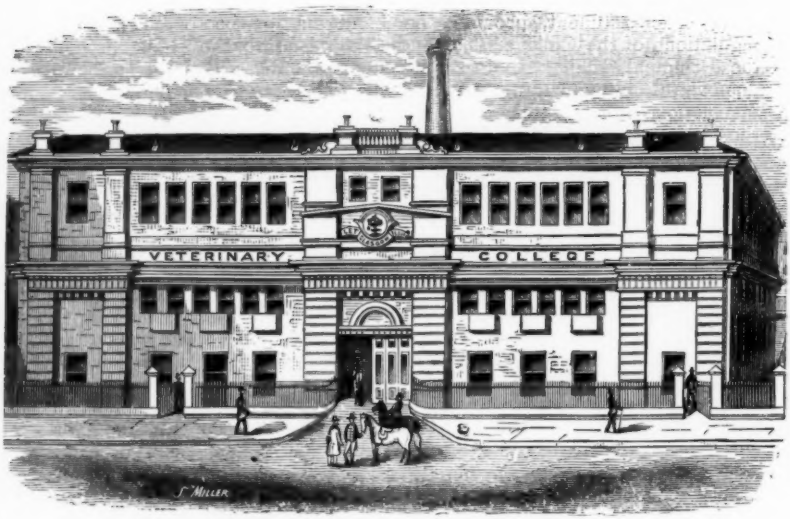
(7) No student can present himself for either the A, B, C, or D examination until a certificate signed by the Principal, setting forth that he has been duly educated at the College and is eligible for his A, B, C, or D examination (as the case may be), has been forwarded to the Secretary of the Royal College of Veterinary Surgeons.

(8) A student who discontinues his attendance at the College for two sessions consecutively without a special arrangement having been made for such absence, will forfeit the right of pupilage, and cannot return to the College and receive further educational instruction, except on the payment of additional fees, the amount of which will be fixed from time to time by the Principal.

XUM

Absence on the part of a student from any of the lectures, demonstrations, class instructions, or class examinations, written or oral, will, notwithstanding his attendance at others, be considered as absence from the College.

(9) A student when rejected at either his first, second, third, or fourth examination by the Court of Examiners of the Royal College of Veterinary Surgeons, must, in order to obtain a certificate of eligibility for re-examination, conform without intermission during the interval between such rejection and the next ensuing examination by such court, to such regulations as to attendance at lectures, demonstrations, and instruction and otherwise, as are prescribed for students during their first, second, or third period of study (as the case may be).



Entrance to the Glasgow Veterinary College.

A student when eligible for examination in either class must present himself, unless prevented by illness or other sufficient cause, in which case he will be required to obtain special permission in writing from the Principal.

(10) Prior to each professional examination, any student may be subjected to a preliminary test by the professors, and if he fails to satisfy them that his attainments are such as to warrant his presenting himself before the Board of Examiners, he will not receive a certificate from the Principal.

(11) The Principal of the College reserves the right or power of refusing admission to any intending student, or to re-admit any student who has not conformed to the rules of the institution, or whose example or conduct is, in his opinion, injurious to the other students,

or detrimental to the reputation of the College as an educational establishment.

(12) Parents and guardians are earnestly requested to cause students to enter on their studies the day fixed for opening the session, and to object to their returning home at Christmas until the classes have risen. All inquiries regarding students (and parents are solicited to make such) should be addressed to the Principal.

Operative Surgery and Clinical Instruction.

Students of the third and fourth years are required to act in rotation as prosectors, dressers and dispensers; and they must also assist the Principal and staff at operations which are conducted within the College throughout the session.

Clinical instruction is given regularly, and the classes are so arranged as to afford time for practical work, such as the visiting of patients, examination of horses as to soundness, *post-mortem* examinations, shoeing, dispensing, and the administration of medicines.

Students preparing for the fourth examination are privileged to attend and assist in the inspection of the Irish and foreign animals arriving at the port of Glasgow, the cattle markets, stations, wharves, cattle sheds, and piggeries of the city—all of which are under the supervision of the Principal as inspector for the Board of Agriculture and the Local Authority of Glasgow, under the Contagious Diseases (Animals) Acts.

The lectures are amply illustrated by specimens of diseased organs, casts, preparations, and patients from time to time. Practical demonstrations on meat inspection are given at the Slaughter House, Moore Street, and other abattoirs.

Prizes.

A free studentship, extending over the full curriculum, and until obtaining the diploma, has been instituted for the son of a veterinary surgeon, deceased or indigent, the nomination to be vested in the office-bearers of the Veterinary Benevolent and Mutual Defence Association.

A bursary of twenty pounds (£15 cash and gold medal, value £5), by Principal M'Call, will be awarded in May of each year to the student who has obtained the highest aggregate marks in his first, second, and third professional examinations before the Board of Examiners of the Royal College of Veterinary Surgeons. The money to be paid at the termination of the students' college career or fourth session, and provided always that his conduct and general bearing meet with the approval of the Principal and professors.

The following prizes will be annually awarded:—

First Session.

(i) *Chemistry.*—A silver medal granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(ii) *Elementary Anatomy.*—A silver medal, granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

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(iii) *Botany.*—A silver medal, granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(iv) *Zoology.*—A silver medal, granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

SECOND SESSION.

(i) *Anatomy (Advanced).*—A silver medal granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(ii) *Physiology and Histology.*—A silver medal granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(iii) A gold medal, bequeathed by the late Professor Allen Thomson, of London, formerly of Glasgow University, will be awarded to the student who passes the best professional examination on anatomy.

(iv) *Stable Management and Manipulation of Domesticated Animals.*—A silver medal, by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

THIRD SESSION.

(i) *Morbid Anatomy.*—A silver medal granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(ii) *Materia Medica, etc.*—A silver medal granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(iii) *Veterinary Hygiene and Dietetics.*—A silver medal granted by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

FOURTH SESSION.

(i) *Veterinary Medicine and Surgery, Obstetrics. (Horse.) (Written Examination.)*—A silver medal by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(ii) *Veterinary Medicine and Surgery, Obstetrics, Ox, Dog, etc.) (Written Examination.)*—A silver medal by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

(iii) *Practical Examination of Horses as to Age, Soundness, Operations, etc.*—A gold medal, granted by Principal M'Call. First and second class certificates of merit.

(iv) *Practical Examination of Cattle and Sheep, as to Age, Soundness, Operations, etc.*—A gold medal, granted by Principal M'Call. First and second class certificates of merit.

(v) *Parasitology.*—A silver medal by the Highland and Agricultural Society of Scotland. First and second class certificates of merit.

MUSEUM.

The museum contains a large collection of anatomical and pathological preparations, and students are admitted during the session, on application to the Principal, to examine the specimens.

A Society is established in connection with the College, and holds its meetings weekly during the winter session.

The Principal is President, and the professors vice-presidents, of the association; the other offices being held by senior students. The entrance fee and subscription, constituting a life member, is one guinea.

At the meetings, papers on Veterinary Science are read and discussed by the members, under the presidency of the Principal, a professor, or veterinary surgeon. Each member is required to read two papers, and if they be considered of sufficient merit by the professors, he receives the degrees of Member and Fellow of the Association.

The library in connection with the society contains a varied and valuable collection of books of reference. All the more important recent works on veterinary and human medicine have been added.

The books are lent out to members weekly during the session.

THE ROYAL VETERINARY COLLEGE OF IRELAND, DUBLIN.

THE Royal Veterinary College of Ireland is the youngest of our Veterinary schools if we accept the Liverpool University school as being simply a transference of the New Veterinary College of Edinburgh to a new home, and judging by the rapid progress it has made it bids fair to excel some of the older institutions. It is now ten years since the Royal Charter was granted, but it was not until the year 1900 that students were admitted and college work began in the temporary buildings, some of which still remain. In 1899, the Department of Agriculture and Technical Instruction (Ireland) Act became law, and a clause in that Act provided the sum of not less than £15,000 for the building and equipment of a Veterinary College. The Agricultural Board are empowered under the same Act to make further grants as they think fit. It is to be hoped that they will soon avail themselves of that power and make a grant for the completion of the buildings.

The style of the permanent buildings is Renaissance, and is executed in red brick and stone; and although only a portion of the entire scheme is at present finished, yet the accommodation and equipment compare more than favourably with those of any other veterinary college in the United Kingdom. The present buildings were formally opened by His Excellency the Lord Lieutenant at the commencement of the winter term, October, 1902, his first public function as Lord Lieutenant. His Excellency takes a great interest in the institution, to emphasise which he honoured the College with another visit during the earlier part of the present year, evincing great satisfaction with all he saw, and expressing great hopes for its future success.

The present buildings enclose a quadrangle which is planted systematically, and constitutes a most useful and easily accessible botanical garden for the use of junior students studying botany and

Groom's Cottage. Forge.

FIG. 1.—Shelbourne Road Entrance.

senior students who have to become familiar with poisonous plants. The largest and most imposing block of buildings stands upon the south side of the quadrangle, and contains a large lecture theatre, the Principal's bacteriological and pathological laboratories, students' microscopic room and biological laboratory, dissecting room, *post-mortem* house, bone room, two professors' retiring rooms, students' common room, photographic dark room lavatories, house surgeon's apartments, and groom and caretaker's cottage. The large lecture theatre occupies the middle of the block, and has sitting accommodation for about 150 students. The middle portion of the rostrum consists of a large revolving table which is used by the Professor of Anatomy for heavy subjects, which can be run directly over it and deposited on it by means of an overhead railway system from the dissecting room. Behind the rostrum are two unique "blackboards" with rubber cloth surfaces, each 28ft. in length vertically. They revolve on rollers, and the lecturer has only to move the portion containing a diagram upwards, and a clean portion appears ready for use. In this way a whole series of fresh diagrams may be left for the student to copy at leisure after the lecture. The wall between these "boards" is specially prepared as a screen for demonstration by the electric lantern which is fixed in the middle of the theatre, the daylight being cut off by dark screens over the windows and skylight. The dissecting-room adjoins the theatre on the grouud floor, and is about the best appointed of any in Europe. It is 60ft. by 25ft., with asphalte floors, white enamelled brick walls, and is particularly light, airy and well ventilated. By the previously mentioned overhead system of rails with points, dissection subjects can be moved to any part around the room with ease. The starting point of the system is in the adjoining *post-mortem* room, and its other terminus as already mentioned is in the large lecture theatre. The *post-mortem* house also has asphalte floors and enamelled brick walls.

The pathological and bacteriological laboratories occupy the first floor over the dissecting and *post-mortem* rooms, and are well lighted and ventilated. They are fitted up with all the most modern apparatus both for teaching and for research work, including incubators, refrigerator, sterilizers, small crematorium, &c. On a large table in the middle of the former laboratory is a photo-micrographic apparatus fitted with an electric Arnst lamp.

The ground floor of the eastern end of the south block is made up of the students' common room which adjoins the lecture theatre, and through which one passes to the osteology room, which is well fitted up and contains specimens of bones of the various domesticated animals for purposes of study by junior students.

The first floor over these two rooms is occupied by the large biological laboratory, a particularly handsome room, and commonly called the "students' microscopic room," since it is always open, and may be used by students of biology, histology, pathology and bacteriology at any time they like. The benches are all fitted with hot and cold water, trough, bunsen burner, all necessary staining reagents, and microscopes with high and low powers. By each microscope is a small electric lamp, so that good light for microscopic work can be ensured at all times. Special trays for the fixing of small animals are also provided for the use of the zoological class. An unique

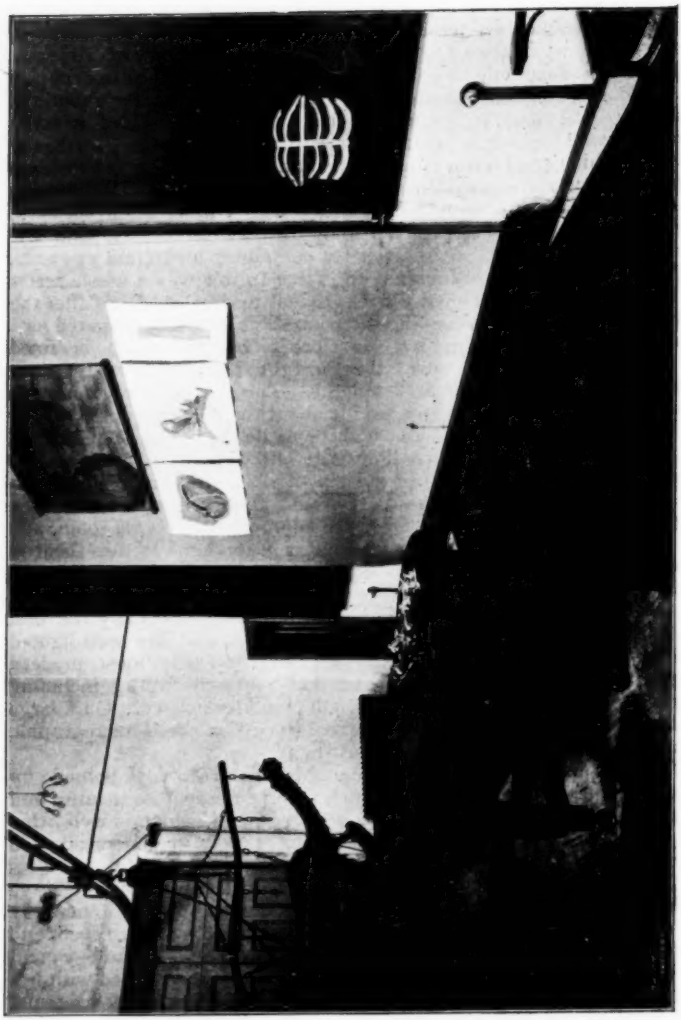

FIG. 2.—Rostrum of Large Lecture Theatre.

arrangement for lantern demonstrations is found here. At the end of the room in the wall between the biological laboratory and the lecturer's room is a large window consisting of a sheet of ground glass, 30 square feet. In the lecturer's room is a special stage for an electric arc lantern, which can be used with a micro-front. Pictures of microscopic sections, &c., can thus be thrown upon the screen and viewed from the laboratory darkened for the purpose. This room will thus be seen to be lavishly equipped, and will undoubtedly compare favourably with any similar room in Europe.

Beyond the biological laboratory is a lecturer's retiring room, and also the photographic dark room fitted with all the requisites for developing negatives and the making of lantern slides. At the opposite end of the south block, adjoining the *post-mortem* house, is the isolation stable, at the furthest point from the hospital, to avoid any risk of transmission of contagion.

On the east side of the quadrangle is an operating theatre for large animals. The walls, for a height of more than eight feet, are in white enamelled brick; above this they are finished smooth in Portland cement. The floor is filled in for a depth of nearly two feet with peat litter, forming a bed upon which horses may be cast with a minimum risk of shock. During operations the peat is covered by a large cloth to keep down the dust. Hot and cold water is brought into the theatre, and there is an ingenious arrangement for obtaining, practically instantaneously, hot water when required. From the operating theatre a passage runs to the pharmacy. Right and left of the passage is a private room for the professor of surgery and lavatory accommodation; and just before reaching the pharmacy the passage opens into a room where is placed an unrivalled collection of materia medica specimens for teaching purposes.

The pharmacy, 28 feet by 25 feet, is a well-lighted and well-ventilated room, provided with a full supply of everything required in everyday practice, where the students are taught to dispense and make up preparations used. The Governors have aimed at obtaining a thoroughly practical pharmacy, the fittings being substantial and neat, of such a character that the future practitioner may have a pattern upon which he may frame his own. In the pharmacy is another installation for obtaining boiling water instantaneously. The whole of the fittings in the pharmacy, as in all the laboratories and class-rooms, were made in the college by the college workmen. All the fittings, therefore, are of an essentially practical nature.

Above the pharmacy, professors' room, and lavatories, in the centre of this block, is a laboratory and class-room for teaching of chemistry, materia medica, &c. It is capable of seating fifty students. The lighting, ventilation, and the appointments leave nothing to be desired. Every student, if he desires, can see without hindrance experiments, specimens, &c., upon the lecturer's table. The black-boards and diagram-screens in this room are unique.

At the south-east corner of the quadrangle is a forge, which is the same size as the operating theatre. The walls are finished in smooth cement work. Patent extractors are in the roof to remove smoke and fumes. There are three fires. The object of the forge is to shoe the animals of the clinique, and for instruction of students in shoeing.

In front of this building, upon the east side of the quadrangle, is a

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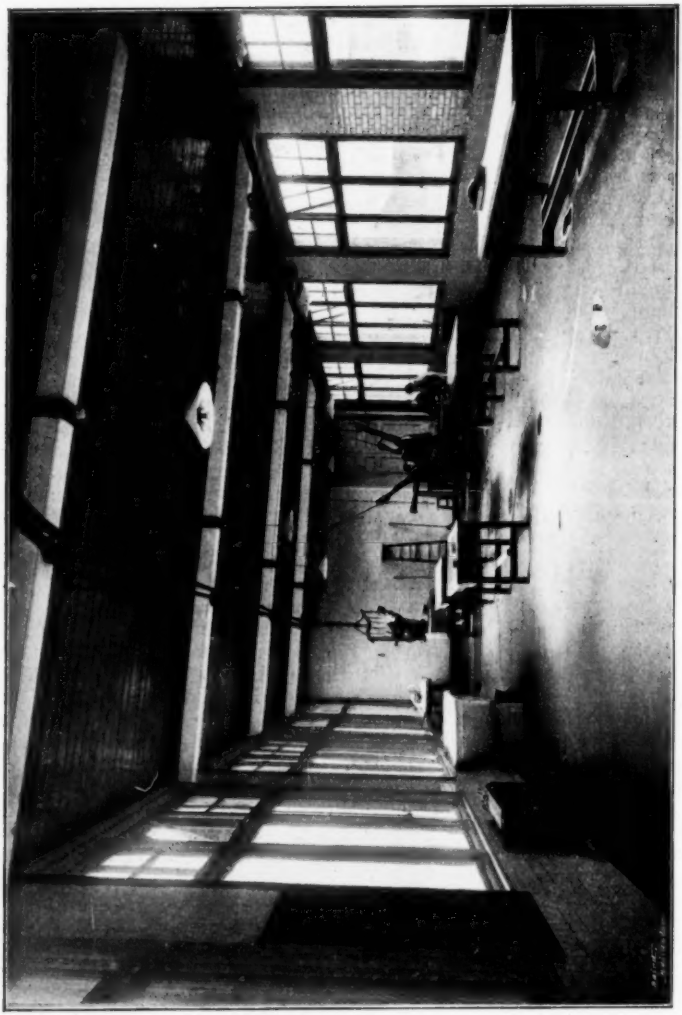

FIG. 3.—Dissecting Room.

paved track upon which horses may be trotted for the diagnosis of lameness.

The College hospital is on the north side of the quadrangle, and affords accommodation for horses, cattle, sheep, dogs and cats. Adjoining the operating theatre, with a communicating door, is a ten-stall stable, with a footbath and a leg-bath and a dark box. Next to the stall stable is one containing six loose boxes, and next to that again is a cow byre and sheep-pen. Each of these places is fitted with hot and cold water, and means for slinging are provided in each box and stall. The canine and feline hospital consists of kennels or cages, zinc lined, and with false bottoms for easy cleansing and disinfecting. In this block there is also a saddle and harness room, feeding room, professors' room, and a room for the use of final-year students only, while over these are large store-rooms used chiefly for hay and other feeding stuffs.

The west side of the quadrangle is at present occupied by temporary buildings, which will shortly be replaced by a large block containing new chemical and physiological laboratories, museum, library, and a new lecture theatre.

COLLEGE FEES.

The College fees, which are payable on entrance, amount to twenty guineas per session. Every student on entering for the first time pays an additional fee of one guinea. The College fees are for tuition, demonstrations, material, &c. There are no resident students and there are no extras.

CLINIQUE AND PRACTICAL WORK.

Stable management and handling of animals is taught daily in the College, and students are expected to take full advantage of the abundant equipment and material provided.

Class examinations are held regularly, and silver and bronze medals and honour certificates awarded to those who obtain highest places.

The College clinique is maintained by the veterinary profession in Ireland—by the practitioners in Dublin especially. Cases belonging to poor people unable to pay the usual fee are received on the recommendation of a practising veterinary surgeon into the College hospital if necessary, or treated in their own stables. No charge is made for those who cannot afford to pay. The College even receive gratis patients belonging to the poor into the hospital free, making no charge for the keep of animals the owners of which are too poor to pay for the keep. Every inducement is thus made to those owning sick and lame animals to come to the College; and the Governors of the College have found that the practice already formed on these lines, with the valued co-operation of the veterinary profession, is steadily growing, and much valuable clinical material is brought within the reach of the students. Cases of interest to students are also sent into the College by practitioners from different parts of Ireland.

Meat inspection is taught at the abattoir. By the courtesy and kind consideration of the Public Health and Markets Committee of

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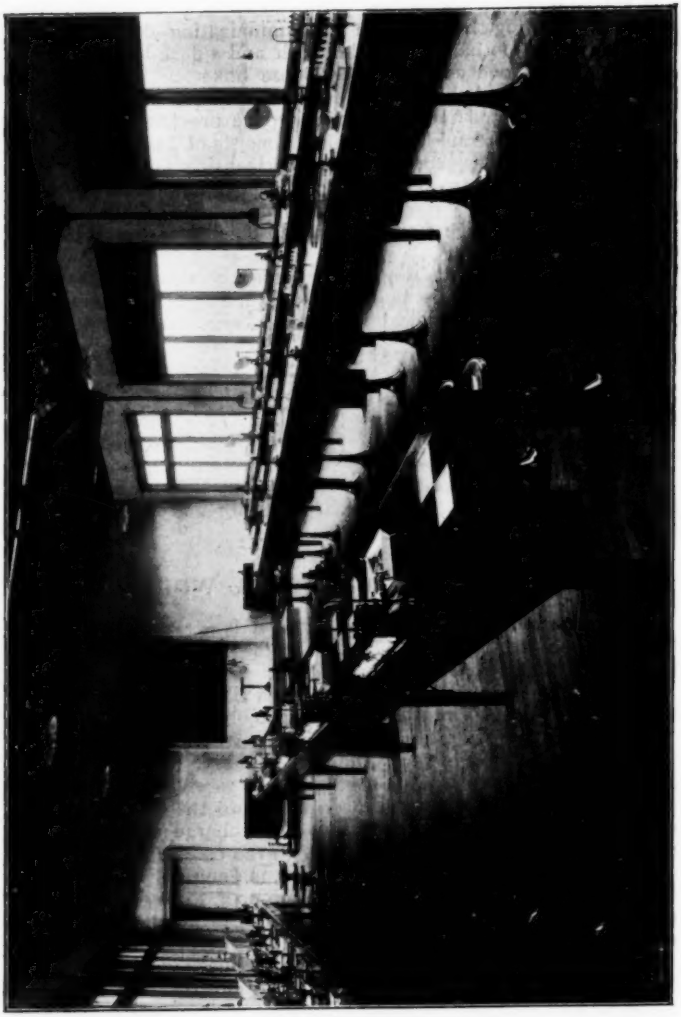

FIG 4.—Biological Laboratory.

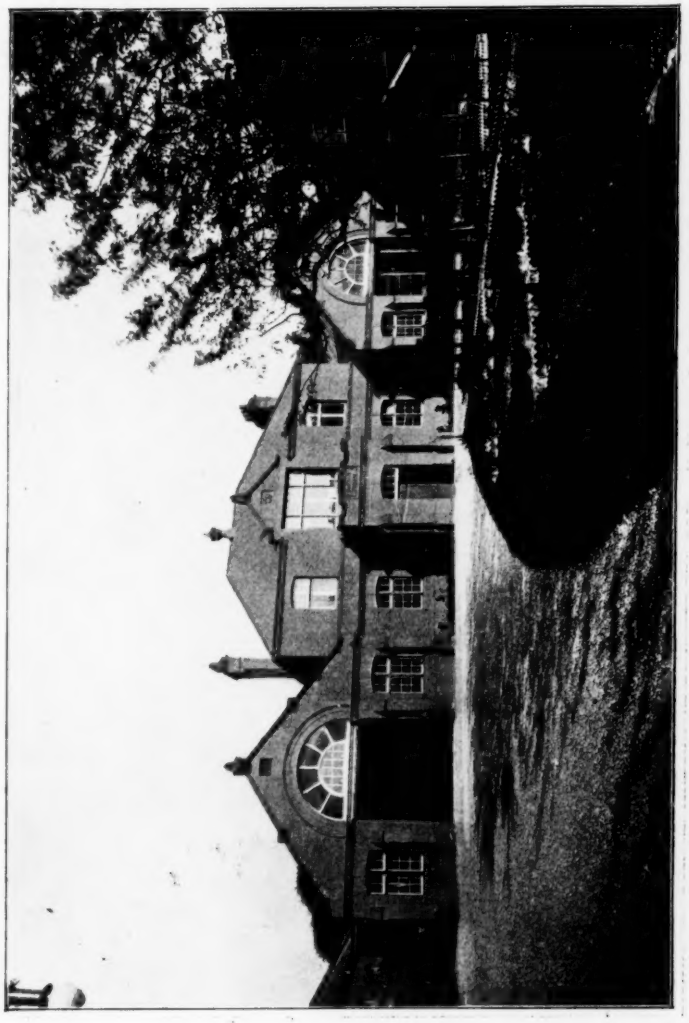

FIG. 5.—The East Block.

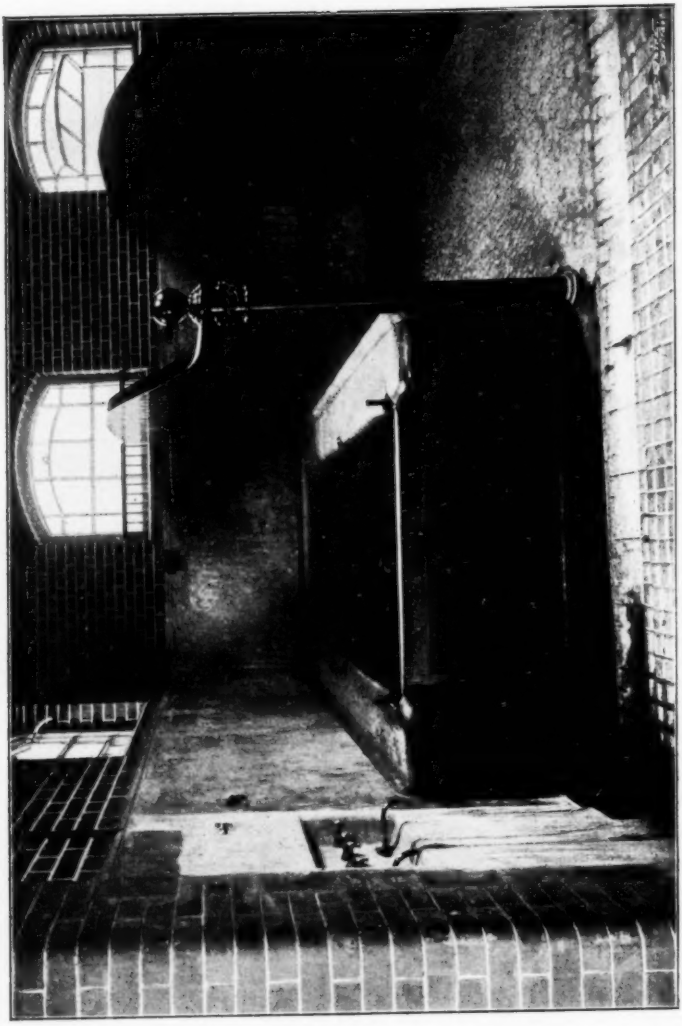

Fig. 6.—Leg Bath in the Hospital.

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MOSS LITTER

for Bedding Horses and Cattle of all descriptions saves 60 per cent. as against Straw, and produces a 30 per cent. better Manure than Good Rotten Straw Dung.

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IS USED
LARGELY FOR
SUMMERING
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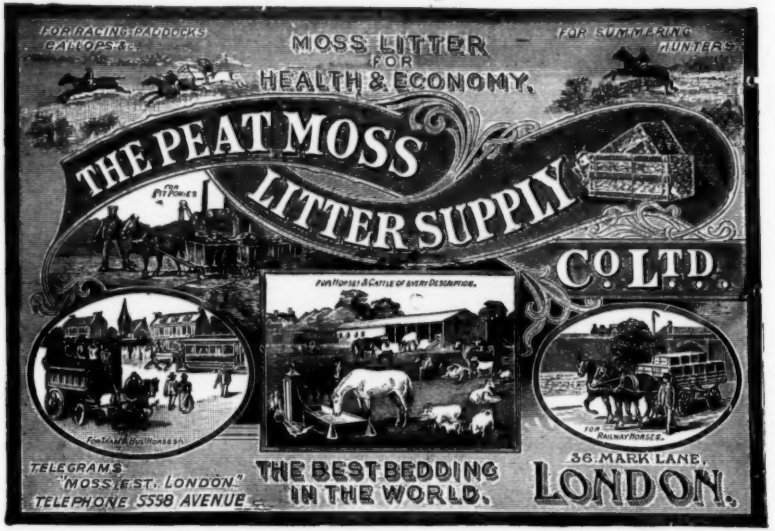
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CO. LTD.
FOR HORSES & CATTLE OF EVERY DESCRIPTION.
TELEGRAMS "MOSS EST. LONDON." TELEPHONE 5598 AVENUE
THE BEST BEDDING IN THE WORLD.
36 MARK LANE, LONDON.

MOSS LITTER DUST

SPECIALLY PREPARED
FOR
CATTLE,
DOGS,
POULTRY,
&c.

The "COUNTY GENTLEMAN," *April* 1, says: "Chief among the merits of Peat Moss are the ease with which it is stored; the small danger it offers as regards fire compared with Straw; non-conductivity; the great powers of absorption; its antiseptic properties, and the ease and advantage with which it can be used as Manure in town gardens and in the country."

the Corporation of the City of Dublin, every facility is given for the examination of carcases and organs of animals killed in the abattoirs. A large amount of valuable material is owing to this privilege brought before the notice of the students every week. Large dairies in the near neighbourhood of the College lend themselves for the teaching of diseases peculiar to cattle, and especially for the teaching of obstetrics.

Medals and honour certificates are given for competition in the several subjects taught during the session: and the Veterinary Medical Association of Ireland will give a medal to the student who passes the best professional examination at the final examination.

Prizes and Honour Certificates for Class Competitions.

A silver medal and a bronze medal will be offered for competition in the classes of biology, chemistry, junior anatomy, senior anatomy, physiology, stable management, pathology, and bacteriology, materia medica, veterinary hygiene, veterinary medicine, and veterinary surgery.

A Bronze medal is offered for competition in the classes of practical chemistry, histology, obstetrics and meat inspection.

A Silver medal will be awarded to the student making the best examination in clinical medicine and surgery.

The Governors will award to the student who obtains the highest marks in all the class examinations of the first year an exhibition. The exhibition entitles the student to free tuition in his second year.

The Veterinary Medical Association of Ireland will give a medal to the student obtaining the highest marks in the Final Professional Examination.

The Cattle Traders' Association will give two medals for competition, the subjects of the competition being Diseases of the Domesticated Animals other than the Horse.

First-class honour certificates and honour certificates will be awarded to students obtaining high places in the class competitions.

Students who have passed the third professional examination are entitled under the regulations to compete for the Walley Memorial Prize.

SPECIAL PRIZES OPEN FOR COMPETITION TO ALL THE COLLEGES.

Three special sets of prizes are open for competition between the students of all the colleges, viz., the Fitzwygram Prize, the Walley Memorial Prize, and the Jubilee Memorial and Bursary Prize.

The Fitzwygram Prize.

These were originally instituted by General Sir Fredk. Fitzwygram, F.R.C.V.S., and for many years during his lifetime this gentleman gave three prizes annually, their respective values being £50, £30 and £20. They were the object of much competition, and to be selected to represent a school to compete for the Fitzwygram

Prize was in itself a great honour. After his death, which occurred last year, it was found that he had bequeathed the sum of £2,000 for the encouragement of veterinary science, the competition to be open only to those who have, within twelve months of the date of the examination, passed their Final; and no student who shall have failed in any of the examinations of the said College during his curriculum is eligible to compete.

The following are the regulations as taken from the codicil of the will:—

(1) The said sum (which with the investments for the time being, and from time to time, representing the same is hereinafter referred to as the Prize Fund) shall be invested in such names and in such securities as the Council of the said College may from time to time direct, provided such securities be authorised as investments for trustees.

(2) The income and annual produce of the Prize Fund shall be applied to provide prizes to be awarded by the said Council as hereinafter provided.

(3) Two prizes shall be awarded in the month of August in each year, the first prize equal in amount or value to five-eighths of the income or annual produce of the Prize Fund actually received during the year expiring on the first day of such August, and the second prize being equal in amount or value to three-eighths of such income or annual produce.

(4) No award shall be made until a full year's dividend shall have been received on the Prize Fund.

(5) Only students of the said College who during the year expiring as aforesaid shall have passed the final examination for the membership diploma of the said College shall be eligible for the prizes to be awarded for that year, and no student who shall have failed in any of the examinations of the said College during his curriculum shall be eligible for a prize.

(6) The first and second prizes respectively shall be awarded to the two students who during their respective curricula shall have obtained the highest and the second highest aggregate of marks in all the professional examinations for the membership diploma of the said College.

(7) If two or more students shall obtain an equal aggregate of marks which shall be the highest, the Council may, at their option, either add the prizes together and divide the amount equally between such students, or hold a special examination for such students to decide how the prizes shall be awarded.

(8) If after the first prize is awarded to the student who has obtained the highest aggregate number of marks there shall be two or more students who shall have obtained an equal aggregate of marks which shall be the next highest aggregate the Council may, at their option, either divide the second prize equally between such students, or hold a special examination for such students to decide how the second prize shall be awarded.

(9) The prizes may be awarded either in money or in such other form as the Council may by resolution from time to time decide, and until any such resolution is passed the prizes shall be awarded in money.

(10) If by reason of any contingency not provided for herein, or by reason of any change in the regulations of the College with regard to the holding of examinations, or for any other reason, it becomes in the opinion of a majority of the said Council desirable to alter the foregoing provisions with regard to the time or method of awarding the said prizes, it shall be lawful for the Council by resolution, approved by two-thirds of the members for the time being of the Council, to make fresh regulations as to the time or method of awarding the said prizes, or for more conveniently carrying out my wishes as herein expressed, but it is my wish that any such new regulations shall carry out as nearly as the Council may consider conveniently possible the foregoing scheme.

The Walley Memorial Prize.

This prize was instituted by voluntary subscription amongst the members of the profession *in memorium* of the late Professor Walley, who was for many years the popular Principal of the Royal (Dick's) Veterinary College in Edinburgh. The competition is open to third year students only and the regulations are as follows:—

(1) The examination is open to the students of any veterinary college in the United Kingdom of Great Britain and Ireland now or hereafter affiliated to the Royal College of Veterinary Surgeons, for education in veterinary science, who shall have, subsequent to the immediately preceding month of October, passed the Class C, or third examination under the present four-years' course.

(2) Candidates intending to compete for this prize must send notice of their intention to the secretary of the Royal College of Veterinary Surgeons, on or before the second Monday in the month of August, after having passed their qualifying examination.

(3) The subjects shall be pathology, materia medica and hygiene.

(4) The examination shall be wholly a written one. The time allowed for each of the three subjects of examination shall be not less than two hours.

(5) An examination shall be held simultaneously in London and Edinburgh, and also in Dublin in the event of a veterinary college being established in Ireland.

(6) The examination may be held at such times and in such places in London, Edinburgh and Dublin as the council shall from time to time appoint.

(7) The president of the Royal College of Veterinary Surgeons, or two members of the profession delegated by the Council, shall attend at each centre and supervise the examination.

(8) No communication shall be made by the examiners of anything that takes place at the examination, except by writing to the Council.

(9) The marks shall be a maximum of 100 in each subject, and an aggregate of 60 per cent. shall be obtained. Failure to obtain 40 per cent. in any one subject shall disqualify.

(10) In view of an examination, the secretary shall apply to the examiners for questions, which shall then be printed and distributed to the candidates at the examination. There shall be six questions in each subject.

(11) The examiners shall place against each answer the number of marks awarded, and shall then forward to the secretary of the Royal College of Veterinary Surgeons the papers, together with their award.

(12) Passage of papers, reference to books or documents, talking or copying will entail immediate dismissal from examination.

(13) At the next council meeting after these regulations are adopted, and subsequently at the same time as the examiners for the college examinations are elected and subject to the same conditions, the Council shall appoint a special court of examiners, consisting of six members, two for each subject, for the purpose of examining candidates for this prize.

(14) Every member of the court of examiners shall be entitled to such fees as shall from time to time be fixed by the Council.

(15) No fee is to be paid by any student competing for the prize.

The Jubilee Memorial and Bursary Prize.

The Jubilee Memorial and Bursary prize was instituted with the idea of providing recent graduates with an opportunity for a year's study at some Continental school, either in France or Germany. The following are the regulations :—

(1) The examination is open to members of the Royal College of Veterinary Surgeons who shall have obtained their diplomas since the first day of January, 1899, for the first competition, and since the last preceding examination for subsequent competitions.

(2) The secretary of the Royal College of Veterinary Surgeons shall advertise the intention to hold an examination two months previous thereto, and candidates intending to compete for this prize must send notice of their intention to the secretary one month before the date fixed for such examination.

(3) The subjects shall be—Elementary knowledge of French or German, physiology, pathology (including bacteriology), and veterinary medicine and veterinary surgery.

(4) The examination shall be wholly a written one. The time allowed for each of the subjects of examination shall be not less than two hours.

(5) An examination shall be held simultaneously in London, Edinburgh and Dublin, if necessary.

(6) The examination may be held at such times and in such places in London, Edinburgh and Dublin, as the Council shall from time to time appoint.

(7) The president of the Royal College of Veterinary Surgons and two members of the Council shall be deputed to attend, one at each centre, and supervise the examination.

(8) The marks shall be a maximum of 100 in each subject. Failure to obtain 40 per cent. in any one subject shall disqualify.

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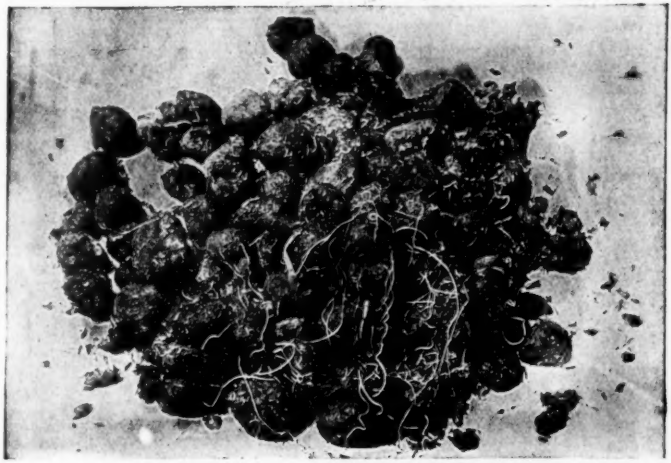
THE UNIQUE CLAIMS OF MOLASSINE MEAL PROVED.



Photograph of a portion of the manure from "IRENE" before being fed with Molassine Meal.

It is a common thing for horse-owners and stock-feeders to write to the Molassine Co., Ltd., pointing out how much better some other foods are from an analytical standpoint than Molassine Meal.

The reply is, that **it is not what an animal eats, but what he digests,** that is of service. If horse-owners and others would but examine the manure in their stables, they would often find that a large proportion of the food given to animals passed through in an undigested state, and that its money value might just as well have been thrown away. This represents a serious loss during the course of a year, and the intelligent stock-feeder should give it his careful attention.

The photograph represents manure from "Irene," before feeding on Molassine Meal, and it will be seen that it contains a large proportion of oats and beans which have come from the animal just as they were eaten.

The photograph shows that the oats and beans had begun to germinate, and distinct growths of oats and beans are to be seen, showing clearly that on account of the low vitality of the animal, fermentation and other stomach troubles had set up, which affected the digestive organs and made them incapable of performing their proper functions.

PRICE: £6 15s. per ton, or 7s. 6d. per cwt. at Works, LONDON or LIVERPOOL.

BEWARE of other foods with similar names, which are only IMITATIONS.

Manufactured by

HENRY TATE & SONS, Ltd., Sugar Refiners, LONDON and LIVERPOOL,

UNDER LETTERS PATENT EXCLUSIVELY FOR

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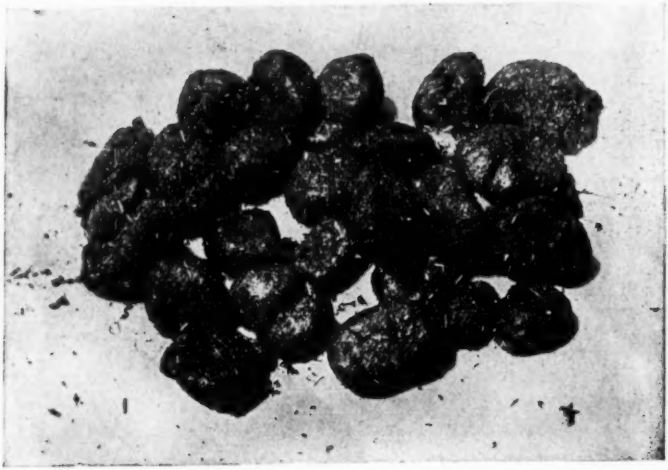
THE UNIQUE CLAIMS OF MOLASSINE MEAL PROVED.



Photograph of Manure from "IRENE" after feeding with Molassine Meal.

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Another mistake buyers sometimes make is that they attempt to compare the value of Molassine Meal with cake or other food. Our answer invariably is, that you cannot compare Molassine Meal with any other food, as there is no comparison. **It is not only its actual feeding value, but the tremendous additional value it gives to all other foods, in consequence of its antiseptic and digestive properties.**

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(15) The elected candidate shall spend a complete sessional year as a student attached to the Veterinary School of Alfort, Paris, or the Veterinary High School of Berlin. A candidate who has selected French as a subject of his examination shall go to Alfort, and one who has selected German shall go to Berlin.

(16) The payment of the bursary to be quarterly in advance, on receipt by the treasurer of satisfactory evidence of the holder's attendance and good conduct at one of the above colleges.

(17) At the close of the year the holder will be expected to furnish a written report of the result of his studies, which the Council reserve the right to publish.

THE CHOICE OF A FUTURE CAREER.

HAVING obtained his Diploma, the newly qualified veterinary surgeon will begin to look about for employment, either in civil life or in Government service.

In the former young men are apt to forget that success largely depends on business ability, and they must provide what the public want; thus a man may be an exceedingly clever chemist or anatomist, but if he has not that indescribable quality known as "tact," his rival who possesses it, but who is not nearly as clever a professional man, will beat him. The public do not always stop to think of what a man's scientific attainments are and apt to go to the one that impresses them most.

It is a mistake, too, to endeavour to undertake work that one is unsuited for. In every profession there is nowadays a tendency to specialisation, and this applies as much to ours as to any of them. Take, for example, the contrast between town and country practice. The former may be in London, or in some large commercial or residential town and consist exclusively of horse and dog patients. The man who would do well and be quite at home amongst contract and cart horses might find himself hopelessly out of place in the West-end. Dogs and small animals are quite a speciality, and the practitioner usually comes more in contact with the owner, with whom very great tact and discrimination are often called for.

XIIM

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The young veterinary surgeon should therefore consider what class of practice he intends to follow, and unless he has "seen practice" before he came to college it is highly advisable that he should go as an assistant amongst the class of professional work he desires to take up.

In the Government Service there is the Army Veterinary Department, the Civil Veterinary Department of the Government of India, the Board of Agriculture and the Veterinary Department of the Irish Privy Council. There are also appointments open from time to time in the Colonies, New Zealand and South Africa, and these countries employ a considerable number of veterinary surgeons. In some cases these colonial appointments are filled up on the spot, but in many instances the Crown agent in London is instructed to obtain a suitable person, and the appointments are advertised in the various newspapers.

The mode of salary and pay of the Army Veterinary Department, the Indian Civil Department and the Board of Agriculture are given below. The conditions of service in the Army Veterinary Department have been considerably improved, but the standard of qualifications has also been raised, and the responsibilities and duties have become more heavy. Unless they have some special reason, we think that parents and guardians should pause and consider before entering a son or ward at one of the colleges with the special object of his obtaining a commission in the Army Veterinary Department. It will cost very little more to make him a medical man, and any boy who has the ability to obtain a veterinary can get a medical qualification, and can enter the Army Medical Corps, the Indian Medical Service, or the Medical Department of the Royal Navy, all of which offer greater emoluments. For instance, the Director-General of the Army Medical Service receives £2,000 per annum, whilst the Director-General of the Army Veterinary Department only has £1,200, with other ranks in proportion.

Nominations are made from time to time as vacancies occcur in the Indian Civil Veterinary Department by the Secretary of State for India. The department means an Indian career, and the climate has to be taken into consideration. The work is hard and the life solitary, many months having to be passed in camp in remote places, away from Europeans, but to a man fond of sport it has advantages, and from a professional point of view India is a new and almost untrodden field for original research.

It must not be forgotten, however, that the expenses of living in India are double what they were twenty years ago, that the rupee is only worth 1s. 4d., and the pagoda tree has been shaken bare of its last leaf.

REGULATIONS FOR ADMISSION TO THE ARMY VETERINARY DEPARTMENT, 1905.

I.—Qualifications of Candidates.

(1) Candidates for admission must make written application to the Secretary, War Office, London, giving the information required by Appendix I. A personal interview with the Director-General, Army Veterinary Services, will subsequently be necessary, and will be arranged by that officer.

(2) The minimum age of candidates is 21 years, and the maximum age 27 years, except in very special cases or on urgent occasions, when the latter limit may be exceeded. Candidates must be unmarried, and will not be accepted unless in the opinion of the Army Council they are in all respects suitable to hold commissions in the army.

(3) Every candidate must be a Member of the Royal College of Veterinary Surgeons, and pass an examination before a Board of Veterinary Officers.

(4) He will be required to forward the following certificates prior to examination :—

(*a*) A certificate of birth or other satisfactory proof of age.

(*b*) Certificates of moral character from clergymen or others in a position to testify, and whose evidence may be deemed satisfactory.

(5) The Dean or other responsible head of the school from which the candidate graduated will be asked by the Director-General for a confidential report as to his professional ability and general fitness to hold a commission in the Department.

(6) If approved, he will be examined as to his physical fitness by a Board of Medical Officers (Appendix II.), and if pronounced physically fit will then be eligible for examination.

(7) Examinations will be held on vacancies occurring, and candidates who obtain the qualifying number of marks will receive commissions according to the order of merit in which they pass.

(8) Candidates will be examined by the Examining Board, and the examination will be in two parts, written and oral, as follows :—

II.—Examinations.

Written.

	Maximum marks.
Veterinary medicine (2 hours)	1,000
,, surgery ,, ...	1,000
,, hygiene ,, ...	1,000

(General papers referring to both horses and cattle, and embracing Pathology in all its branches, Surgical Anatomy, and General and Special Hygiene.)

To qualify—50 per cent. in each subject.

Oral.

	Maximum marks.
Examination of horses—includes soundness generally and certificates thereon, ageing, shoeing, the eye, and detection of lameness	3,000
Clinical diagnosis, the practical handling of animals and administration of medicines ...	2,000
Practical surgery and surgical anatomy	2,000

To qualify—50 per cent. in each subject.

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The mode of salary and pay of the Army Veterinary Department, the Indian Civil Department and the Board of Agriculture are given below. The conditions of service in the Army Veterinary Department have been considerably improved, but the standard of qualifications has also been raised, and the responsibilities and duties have become more heavy. Unless they have some special reason, we think that parents and guardians should pause and consider before entering a son or ward at one of the colleges with the special object of his obtaining a commission in the Army Veterinary Department. It will cost very little more to make him a medical man, and any boy who has the ability to obtain a veterinary can get a medical qualification, and can enter the Army Medical Corps, the Indian Medical Service, or the Medical Department of the Royal Navy, all of which offer greater emoluments. For instance, the Director-General of the Army Medical Service receives £2,000 per annum, whilst the Director-General of the Army Veterinary Department only has £1,200, with other ranks in proportion.

Nominations are made from time to time as vacancies occcur in the Indian Civil Veterinary Department by the Secretary of State for India. The department means an Indian career, and the climate has to be taken into consideration. The work is hard and the life solitary, many months having to be passed in camp in remote places, away from Europeans, but to a man fond of sport it has advantages, and from a professional point of view India is a new and almost untrodden field for original research.

It must not be forgotten, however, that the expenses of living in India are double what they were twenty years ago, that the rupee is only worth 1s. 4d., and the pagoda tree has been shaken bare of its last leaf.

REGULATIONS FOR ADMISSION TO THE ARMY VETERINARY DEPARTMENT, 1905.

I.—Qualifications of Candidates.

(1) Candidates for admission must make written application to the Secretary, War Office, London, giving the information required by Appendix I. A personal interview with the Director-General, Army Veterinary Services, will subsequently be necessary, and will be arranged by that officer.

(2) The minimum age of candidates is 21 years, and the maximum age 27 years, except in very special cases or on urgent occasions, when the latter limit may be exceeded. Candidates must be unmarried, and will not be accepted unless in the opinion of the Army Council they are in all respects suitable to hold commissions in the army.

(3) Every candidate must be a Member of the Royal College of Veterinary Surgeons, and pass an examination before a Board of Veterinary Officers.

(4) He will be required to forward the following certificates prior to examination :—

(*a*) A certificate of birth or other satisfactory proof of age.

(*b*) Certificates of moral character from clergymen or others in a position to testify, and whose evidence may be deemed satisfactory.

(5) The Dean or other responsible head of the school from which the candidate graduated will be asked by the Director-General for a confidential report as to his professional ability and general fitness to hold a commission in the Department.

(6) If approved, he will be examined as to his physical fitness by a Board of Medical Officers (Appendix II.), and if pronounced physically fit will then be eligible for examination.

(7) Examinations will be held on vacancies occurring, and candidates who obtain the qualifying number of marks will receive commissions according to the order of merit in which they pass.

(8) Candidates will be examined by the Examining Board, and the examination will be in two parts, written and oral, as follows :—

II.—Examinations.

Written.

	Maximum marks.
Veterinary medicine (2 hours)	1,000
,, surgery ,, ...	1,000
,, hygiene ,, ...	1,000

(General papers referring to both horses and cattle, and embracing Pathology in all its branches, Surgical Anatomy, and General and Special Hygiene.)

To qualify—50 per cent. in each subject.

Oral.

	Maximum marks.
Examination of horses—includes soundness generally and certificates thereon, ageing, shoeing, the eye, and detection of lameness	3,000
Clinical diagnosis, the practical handling of animals and administration of medicines ...	2,000
Practical surgery and surgical anatomy	2,000

To qualify—50 per cent. in each subject.

An aggregate of 60 per cent. in all subjects combined will be required.

(9) A candidate may be rejected if he shows any deficiency in his general education.

(10) A candidate on appointment as veterinary officer will, on joining at Aldershot, be required to undergo a course of special training at the Army Veterinary School.

At the end of the course he will be examined, and if the examination be satisfactory and his general report good, he will be retained in the service; but should his examination be unsatisfactory, or his general report not good, his services will be dispensed with, in accordance with last part of Article 431 of the Pay Warrant (*see* Extracts below).

III.—Ranks.

(*Extracts from the Pay Warrant.*)

"319. The substantive ranks of the officers of Our Army Veterinary Department shall be as follows:—Colonel, Lieutenant-Colonel, Major, Captain, Lieutenant.

"320. The undermentioned officers shall rank as follows:—As Major-General—Colonel holding the appointment of Director-General, Army Veterinary Services."

IV.—Appointment, Tenure, and Promotion.

(*Extracts from the Pay Warrant.*)

"431. A candidate who has proved after examination that he possesses a competent knowledge of the required subjects, shall be appointed a veterinary officer on probation for a period of six months, at the expiration of which period, if his probationary service has been satisfactory, he shall, on the recommendation of the Director-General, and with the approval of our Army Council, receive a commission as Lieutenant, and the commission shall be antedated so as to embrace the period which the Lieutenant has passed on probation. If his probationary service has not been satisfactory, his services shall be dispensed with, and he shall have no further claim on the Department."

"433. The appointment of Director-General of our Army Veterinary Services shall be for three years, unless the term is specially extended by our Army Council for a further period not exceeding two years.

"434. A Lieutenant shall be eligible for promotion to the rank of Captain on completing five years' commissioned service, provided that he has previously qualified in such manner as may be prescribed by our Army Council.

"435. A Captain shall be eligible for promotion to the rank of Major on completing ten years' service in the rank of Captain, *or if he joined the department before* October 5th, 1898, *on completing 15 years' total service*, provided that he has served three years abroad and has previously qualified in such manner as may be prescribed by our Army Council.

"436. Promotion to the rank of Lieutenant-Colonel shall be made by selection from Majors, of not less than fifteen years' service, who have served at least three years in India, and have previously qualified in such manner as may be prescribed by our Army Council.

"437. Promotion to the rank of Colonel shall be made by selection from Lieutenant-Colonels who have served five years in that rank.

"438. An officer of our Army Veterinary Department shall be eligible for promotion to brevet rank under the conditions laid down in Article 36."*

Regulations for the Examination for Promotion in the Army Veterinary Department.

These examinations are intended to test the progress and proficiency of officers in those branches of knowledge which are essential to their continued efficiency.

Lieutenant before promotion to Captain.

This examination may take place at any time after completing three years' service.

Subjects:—Duties of executive veterinary officers, military law.

Captain before promotion to Major.

This examination may take place at any time within three years of becoming eligible for promotion, under arrangements to be made by the Director-General, Army Veterinary Services.

The subjects of this examination, which are detailed in the "King's Regulations," are as follows:—

(1) Veterinary medicine.
(2) „ surgery.
(3) „ hygiene.
(4) „ bacteriology and tropical diseases.
(5) One special subject selected by the candidate with the approval of the Director-General, Army Veterinary Services.

Captains who are in possession of the Fellowship degree of the Royal College of Veterinary Surgeons are exempt from this examination.

Majors before promotion to Lieutenant-Colonel.

This examination will be held from time to time under arrangements to be made by the Director-General, Army Veterinary Services.

The subjects of this examination, which are detailed in the "King's Regulations," are as follows:—

(1) Military law ("Manual of Military Law, King's Regulations").
(2) Duties of administrative veterinary officers at home and abroad.
(3) Management of epizootics.
(4) Sanitation of camps, stables, and transports from the veterinary point of view.

* Army Council's Instructions.

Distinction in original investigation or research may be regarded as "distinguished service of an exceptional nature other than in the field," within the meaning of Article 36.

V.—Pay and Charge Pay.

(*Extract from the Pay Warrant.*)

Pay.

"439. The following shall be the rates of pay and charge pay of our Army Veterinary Department:—

Pay.

Director-General	£1,200 a year	Inclusive of all allowances except field and travelling allowances.

	Daily. £ s. d.
Colonel	1 15 0
Lieutenant-Colonel	1 10 0
Major...	1 0 0
After 5 years' service as such	1 2 0
„ 10 „ „	1 4 0
Captain	0 15 6
After 5 years' service as such, provided he has served 3 years abroad	0 17 6

	Yearly. £ s. d.
Lieutenant	250 0 0

"A Captain of our Army Veterinary Department holding the brevet rank of Major shall receive pay at 2s. a day in addition to the rates laid down for a Captain above.

Charge pay.

	Daily.
With an army in the field—	
The senior veterinary officer—a rate to be fixed by the Army Council, according to the magnitude of the charge.	
In a command abroad—	
The senior veterinary officer in charge of mounted troops of our Regular Forces, if the total number of animals attached to the troops is 1,500 or upwards	5s.
In a command at home—	
The veterinary officers employed with the Army Remount and Registration Establishment	5s."

VI.—Half-pay, &c.

(*Extract from the Pay Warrant.*)

"474. A medical or departmental officer who becomes medically unfit for duty, or supernumerary on reduction of establishment, or who is serving under the Egyptian Government, shall be dealt with, as regards removal to half-pay and restoration to full pay, under the regulations applicable to combatant officers similarly situated, so far as they apply."

"480. RATES OF HALF-PAY.

	Daily. £ s. d.
Colonel	1 5 0
Lieutenant-Colonel	0 17 6
After 25 years' service	0 19 0
,, 30 ,, ...	1 1 0
Major or Captain	0 8 6
After 15 years' service	0 10 6
,, 20 ,, ...	0 13 0
,, 25 ,, ...	0 16 0
Lieutenant	0 4 0
After 5 years' service	0 7 0"

VII.—RETIRED PAY.

(*Extract from the Pay Warrant.*)

(a) *Voluntary Retirement.*

Conditions of Retirement.

"583. An officer of our Army Veterinary Department shall be entitled to retire after twenty years' service.

"584. An officer of our Army Veterinary Department may be permitted to retire after ten years' service in cases in which such retirement may be deemed expedient by our Army Council.

"585. SCALE OF RETIRED PAY.

	Yearly. £
Colonel—	
After 30 years' service	500
Lieutenant-Colonel—	
After 20 years' service	365
,, 25 ,, ...	400
,, 30 ,, ...	450
Maior—	
After 20 years' service	300
,, 25 ,, ...	365
Captain—	
After 20 years' service	250
	Gratuity. £
An officer of any rank—	
After 10 years' service, but less than 20 years' service	1,000

"An officer of our Army Veterinary Department who, on voluntary retirement has served for less than three years in the rank from which he retires, shall only be entitled to the retired pay assigned to the next lower rank.

(b) *Retirement on account of Age, or Limitation of Period of Service.*

Conditions of Retirement.

"586. The Director-General shall, unless his service has been specially extended under Article 433, retire on completion of three years' service as such; the retirement of Colonels shall be compulsory at the age of 57, of Lieutenant-Colonels at the age of 55, and of Majors at the age of 55, or after 28 years' service if they have previously been

passed over for promotion to Lieutenant-Colonel, or as soon after attaining 28 years' service as they may be so passed over, provided that in no case shall they serve beyond the age of 55.

"587. SCALE OF RETIRED PAY.

	Yearly. £
Director-General, Army Veterinary Services	700
Colonel—	
After 30 years' service	500
	Yearly. £
Lieutenant-Colonel—	
After 20 years' service	365
,, 25 ,, ...	400
,, 30 ,, ...	450
	Daily. s. d.
Major—	
After 15 years' service	10 6
	Yearly. £
,, 20 ,, ...	300
,, 25 ,, ...	365
	Daily. s. d.
Captain—	
After 10 years' service	8 6
,, 15 ,, ...	10 6
	Yearly. £
,, 20 ,, ...	250"

(c) *Retirement on Account of Medical Unfitness.*

SCALE OF RETIRED PAY.

"589. Officers with at least 10 years' service—

"*Medical Unfitness caused by Military Service.*—The rates laid down in Article 587.

"*Medical Unfitness not caused by Military Service.*—The rates laid down in Article 585.

"Officers with less than 10 years service—

Medical Unfitness caused by Military Service.

Captain ... ... 8s. 6d. a day.
Lieutenant under 5 years' service 4s. a day.
After 5 years' service ... 7s. a day, or a gratuity at the rate mentioned below.

Medical Unfitness not caused by Military Service.

After 5 years' service ... ... A gratuity of £100 for each complete year of service."

Leave of Absence.

"457. Full pay during ordinary leave of absence for the period admissible in the case of a Staff Officer under Article 177 may, except as provided in Article 430 for a governor of a military prison serving at home, and in Article 456, be granted to a medical or departmental officer, provided that no additional expense, except as sanctioned in

Articles 425 and 430A of this our warrant and in the 'allowance regulations,' is incurred thereby.

"458. When the periods of leave referred to in Article 457 have been exhausted or exceeded in consequence of sickness, no further pay during ordinary leave shall remain due."

"177. Subject to Articles 177a and 179, an officer employed on the general or personal staff, an officer of our Ordnance College, our School of Gunnery, our School of Military Engineering, or our School of Musketry, or an Inspector, Assistant-Inspector, or Superintendent of Gymnasia, may draw his pay for continuous or intermittent periods absence on ordinary or sick leave, not exceeding in the aggregate 61 days in each year, reckoning from April 1st, provided the duties of his appointment are performed continuously without extra charge to the public, except as laid down in Article 181. If serving at Gibraltar or Malta, or in Cyprus, Egypt, Bermuda, British North America, or the West Indies, he may, under similar conditions, draw 122 days' pay during absence in any two consecutive years, provided that he does not draw more than 61 days' leave during absence on leave in the first of such two years. If serving in China, Ceylon, the Straits Settlements, Mauritius, South Africa, or St. Helena, or as a Military Attaché, he may, under similar conditions, draw 183 days' pay during absence in any three consecutive years, provided that he does not draw more than 61 days' pay during absence on leave in the first of such three years, nor more than 122 days' pay during absence on leave in the first two of such three years.

"Special leave is granted to a certain number of officers in each year for the purpose of attending post-graduate courses, the fees of which are paid by the Government, and the officers receive their full allowances during the time they are attending the courses."

Sick Leave

"439B. An officer of our Army Veterinary Department may be allowed full pay during sick leave of absence on the same conditions as those laid down for regimental officers by Articles 298 and 299."

"298. A regimental officer may be permitted to draw full pay for a period not exceeding one year during sick leave, granted on the recommendation of the regulated medical authority as defined in Artlcle 1,320, provided there is a reasonable probability that he will be fit to return to duty at the expiration of his leave.

"299. In very special cases, such as loss of health from tropical service, active operations, or wounds, full pay may be issued for a period or periods of sick leave in excess of that laid down in Article 289, provided that the officer's sick leave shall not, in all, exceed eighteen months."

"464. When a medical or departmental officer is sick at his station, whether in hospital, quarters, or lodgings, his absence from duty on account of sickness, if not exceeding thirty days in duration, and if duly certified by a medical officer, shall not be included in the period of absence on leave to which the issue of pay is limited by Article 457, provided the general officer commanding at the station considers that the circumstances of the case warrant such a concession. Any excess of such leave of absence on account of sickness at an

officer's station, beyond the period of thirty days, shall come under the provisions of Article 458."

VIII.—Widows' Pensions.

Widows' pensions and compassionate allowances for children and other relatives of deceased officers are given under certain conditions specified in the "Royal Warrant for Pay and Promotion."

IX.—Passages to Officers' Families.

Passages are granted to the families of officers of the Army Veterinary Department under the conditions laid down in paragraph 427 of the "Allowance Regulations."

Medical Examination of Candidates.

(1) A candidate for a commission in the Army Veterinary Department must be in good mental and bodily health, and free from any physical defect likely to interfere with the efficient performance of military duty.

(2) The examination will be conducted by a Board of Medical Officers.

(3) The attention of the Board will be directed to the following points;—

(*a*) That the correlation of age, height, weight, and chest girth is equal or superior to that which is given in the following table.

Physical Equivalents.

Age.	Height without shoes.	Chest.	
		Girth when expanded.	Range of expansion.
21 and upwards.	62½ and under 65 inches.	35 inches.	2 inches.
	65 ,, 68 ,,	35½ ,,	2 ,,
	68 ,, 70 ,,	36 ,,	2 ,,
	70 ,, 72 ,,	36½ ,,	2½ ,,
	72 and upwards.	37 ,,	2½ ,,

(*b*) Measurement of height.

The candidate will be placed against the standard with his feet together, and the weight thrown on the heels, and not on the toes or outside of the feet. He will stand erect without rigidity, and with the heels, calves, buttocks, and shoulders touching the standard; the chin will be depressed to bring the vertex of the head level under the horizontal bar, and the height will be noted in parts of an inch to eighths.

(*c*) Measurement of chest.

The candidate will he made to stand erect with his feet together, and to raise his hands above his head. The tape will be carefully adjusted round the chest, with the posterior upper edge touching the inferior angles of the shoulder blades, and its anterior lower edge the upper part of the nipples. The arms will then be lowered to hang loosely by the side, and care will be taken that the shoulders are not

thrown upwards or backwards so as to displace the tape. The candidate will then be directed to empty his chest of air as much as is possible. This is best done by continuously whistling with the lips as long as sound can be produced. The tape is carefully gathered in during the process, and when the minimum measurement is reached, it is recorded.

He will then be directed to inflate his chest to its utmost capacity. This maximum measurement will likewise be noted. The girth with the chest fully expanded and the range of expansion between the minimum and maximum will then be recorded.

(*d*) Weight.

The candidate will also be weighed and his weight recorded in the proceedings of the Board.

The regulations regarding the examination of eyesight are as follows:—

(1) If a candidate can read D = 8 at 6 metres (20 English feet) and D = 0·6, at any distance selected by himself, with each eye without glasses, he will be considered fit.

(2) If a candidate can only read D = 24 at 6 metres (20 English feet) with each eye without glasses, his visual deficiency being due to faulty refraction which can be corrected by glasses which enable him to read D = 6 at 6 metres (20 English feet) with one eye, and D = 12, at the same distance with the other eye, and can also read D = 0·8 with each eye without glasses, at any distance selected by himself, he will be considered fit.

(3) If a candidate cannot read D = 24 at 6 metres (20 English feet) with each eye without glasses, notwithstanding he can read D = 0·6, he will be considered unfit.

Normal vision of one eye may be sufficient to allow a higher defect in the other, to the extent of one-sixth, if the defect is simple error in refraction remedied by glasses.

The candidate must be able to read the tests without hesitation in ordinary daylight.

(N.B.—Snellin's test types will be used for determining the acuteness of vision.)

Squint, inability to distinguish the principal colours, or any morbid conditions, subject to the risk of aggravation or recurrence in either eye, will cause the rejection of a candidate.

The following additional points will then be observed:—

(*b*) That his hearing is good.

(*c*) That his speech is without impediment.

(*d*) That his teeth are in good order. Loss or decay of the teeth will be considered a disqualification. Decayed teeth, if well filled, will be considered as sound.

(*e*) That his chest is well formed, and that his lungs and heart are sound.

(*f*) That he is not ruptured.

(*g*) That he does not suffer from hydrocele, varicocele, varicose veins in a severe degree, or other disease likely to cause inefficiency. A slight defect, if successfully cured by operation, is not a disqualification.

(*h*) That his limbs are well formed and developed.

(*i*) That there is free and perfect motion of all the joints.

(*j*) That his feet and toes are well formed.
(*k*) That he does not suffer from any inveterate skin disease.
(*l*) That he has no congenital malformation or defect.
(*m*) That he does not bear traces of previous acute or chronic disease pointing to an impaired constitution.

In any doubtful case the Board should further state :—
(*n*) Whether he is, in their opinion, of pure European descent.

INDIAN CIVIL VETERINARY DEPARTMENT.

(1) The Officers of the Indian Civil Veterinary Department perform or supervise all official veterinary work in India, other than that of the Army, and are debarred from private professional practice in India. Their duties may be divided into three classes, under the following heads :—

(*a*) Educational work in veterinary colleges ;
(*b*) Horse and mule breeding ;
(*c*) Cattle disease and cattle breeding.

(2) Appointments to this Department are made, as vacancies occur, by the Secretary of State for India, and applications regarding them should be addressed to the Revenue Secretary, India Office, London, S.W.

(3) Candidates must not (except on special grounds to be approved by the Secretary of State) be over 26 years of age, and must possess a diploma from the Royal College of Veterinary Surgeons. Evidence of a knowledge of bacteriology, and of capacity for carrying out original research, will be specially taken into account in estimating the claims of candidates. Good health, a sound constitution, and active habits are essential, and candidates must be certified by the Medical Board of the India Office to be physically fit for service in India.

(4) Pay will be as follows :—On arrival in India Rs. 500 a month, rising by Rs. 40 each year to Rs. 1,100, which rate will continue from the beginning of the sixteenth to the end of the twentieth year of service ; after the beginning of the twenty-first, year Rs. 1,200 a month. The pay of the Inspector-General, the administrative head of the Department, will be Rs. 1,800 a month.

Extra allowances of Rs. 80 to 100 a month are attached to certain appointments, and house rent is allowed in certain cases.

(5) Appointments will be made on probation for five years, and subject to such rules as the Government of India may lay down in regard to qualification in the native languages.

(6) On appointment a free first-class passage to India will be granted, subject to the condition that its cost shall be refunded in the event of an officer resigning the service, on grounds other than certified ill-health, within five years from the date of his arrival in India. If on the expiry of the five years of probation the officer's service is determined, or if he is compelled by certified ill-health to resign the service before such expiry, he will be provided with a free first-class passage back to England.

(7) Officers who, after satisfactory completion of the period of probation, remain in the service of the Government of India, will

become entitled to the benefit of the leave and pension rules for European officers contained in the Indian Civil Service Regulations (regarding which information can be obtained from the Revenue Secretary, India Office, London, S.W.), and will reckon service for leave and pension from the date of arrival in India on first appointment. Retirement is obligatory at 55 years of age.

The Inspector-General will be eligible for the extra pension of Rs. 1,000 per annum, admissible to an officer after at least three years' approved service as head of a department, if considered deserving of the special concession.

(8) Each officer will be required, before leaving this country, to enter into an agreement with the Secretary of State for India embodying the conditions of his appointment.

THE BOARD OF AGRICULTURE (ENGLAND).

The following are the Conditions on which Temporary Veterinary Inspectors for the purposes of the Diseases of Animals Acts, 1894 and 1896, are engaged by the Board of Agriculture.

(1) THE engagement may be terminated upon one calendar month's notice being given on either side, and any Certificate of Appointment which may be forwarded by the Board to the Veterinary Inspector is to be returned to the Board on the termination of the engagement.

(2) The salary will be at the rate of £250 a year.

(3) The salary will be paid monthly.

(4) The Veterinary Inspector will be stationed in such town or place as the Board may from time to time direct. The Veterinary Inspector is to return to his station every evening, except when his official duties prevent him from doing so.

(5) Subsistence allowance will be allowed at the rate of 15s. for each night on which the Veterinary Inspector may be absent on duty from his station, or from his home. When the Veterinary Inspector is ordered to London on duty no travelling expenses between the Offices of the Board and the place at which the Veterinary Inspector may stay in London or its neighbourhood will be allowed. Where the Veterinary Inspector is ordered to change his station, subsistence allowance at the above rate will be allowed for a period not exceeding seven nights.

(6) The actual expenses of locomotion will be allowed, but in any case where a conveyance is necessary the journey should be made, where practicable, by means of public conveyances. The Inspector is to travel second-class on railways, except where there is no second-class accommodation in the particular train in which he is travelling, and where waiting for a train with second-class accommodation would cause inconvenience to the public service. A form for making a return of these expenses will be supplied to the Veterinary Inspector.

(7) The Veterinary Inspector is to have no claim to superannuation allowance or any gratuity or compensation whatever on retirement or discharge.

(8) The services of the Veterinary Inspector are to be considered to be at all times at the disposal of the Board, and he is not to engage in private practice of any kind at any time during his engagement.

The headquarters of the Board are at 4, Whitehall Place, S.W.

DEPARTMENT OF AGRICULTURE AND TECHNICAL EDUCATION IN IRELAND.

THE Department of Agriculture and Technical Instruction for Ireland employ twenty-six Veterinary Inspectors at the various ports in Ireland, principally in connection with the inspection of live stock imported or for export. Twenty of these posts are whole-time and pensionable, and the scale of salary attaching to them is £200 rising by annual increments of £10 to £300 per annum. The six other posts are held by non-whole-time inspectors, two of them are in receipt of personal salaries at the rate (to be reconsidered on a vacancy) of 16s. 6d. per day, Sundays included; two others have salaries of £100 per annum each, and the remaining two £160 and £150 per annum respectively.

The Department also employ temporarily, in connection with the extirpation of certain diseases scheduled under the Diseases of Animals Acts, a staff of Veterinary Inspectors varying in number as the needs of the service require, at salaries commencing at 10s. a day (Sundays included) rising to 12s. a day after five years, and to 14s. 6d. a day after seven years' continuous service.

Vacancies on the staff of Portal Veterinary Inspectors are usually filled from the staff of Temporary Inspectors. No age limits have been fixed for these appointments and qualified veterinary surgeons only are eligible.

Besides those already enumerated there are also the following appointments for which qualified veterinary surgeon are eligible, viz:—

Chief Inspector, veterinary branch, salary £500-£20-£700.

Superintending Travelling Inspector, veterinary branch, salary £400-£20-£500.

Veterinary Inspector, Agricultural Branch, salary £500, and three travelling inspectorships (salary £250-£15-£350), which are open to but are not confined to veterinary surgeons.

All applications relating to the positions mentioned should be addressed to the Secretary, Department of Agriculture and Technical Instruction for Ireland, 4, Upper Merrion Street, Dublin.

THE COLONIAL SERVICES.

MANY openings are now offered to veterinary graduates to induce them to enter the Colonial Services.

South Africa, Australia, and New Zealand may particularly be mentioned, although these do not by any means complete the list.

Veterinary progress in all these countries has been simply phenomenal, although it has only been by means of the most energetic efforts on the part of those in authority.

In South Africa the name of Mr. Duncan Hutcheon is almost a household word wherever the subject of agriculture, as applied to the diseases of stock, is mentioned, whilst in New Zealand Mr. J. A. Gilruth has formed within a decade a complete veterinary department, whose services are absolutely indispensable to the Government of that country. Professors McEachran and Smith have passed many graduates through their schools in Montreal and Toronto respectively; and in Australia, through the energy of Mr. Kendall,

Melbourne possesses a Veterinary College of its own; the course is one of three years' study and its graduates are accepted in any part of that continent.

In the colonies, veterinary work bears an entirely different aspect from that of England, as although the private practitioner can in places make a good living, in the majority of instances it is necessary that he should hold in addition some public or Government appointment. Horses and stock have not quite the same value as that which is placed on them in England. Of course there are exceptions to this rule, but generally, the young graduate who takes up work in the colonies leaves England with a definite appointment in view. In South Africa he may make for Cape Colony, Natal, or the Transvaal, where his work will largely consist in the eradication of certain cattle plagues from the district which will be allotted to him, and in addition he may be required to respond to private requests and to advise the farmers in his neighbourhood. For this he will receive a fixed stipend with certain allowances for travelling and other expenses. The Mounted Constabulary offers a few vacancies for men who like a semi-military life, and as a rule these billets are not long vacant. Certain men whose tastes lie in that direction may be appointed as Bacteriologists, and the work done by Watkins-Pitchford in Natal, Stockman in the Transvaal, and Robertson in Cape Colony, are evidences of the value of the appointment of a skilled veterinarian to such positions.

In Australia there are positions under the State Board of Health, especially in connection with the inspection of cattle kept for dairy purposes; and in New Zealand, in addition to dealing with contagious disease, the veterinary service has control of meat inspection. At the present time it is probably correct to say that there is no other English-speaking country which has such a perfect and sanitary method of meat inspection as that of New Zealand. By a law which was passed a few years ago, it is necessary that every town of over 2,000 inhabitants should possess a public abattoir and have a veterinary surgeon as its meat inspector. Even in England, in this twentieth century, we are many years behind the times.

Particulars in regard to salary and other things respecting the veterinary services can always be obtained through the Colonial Office in London.

As a general rule, vacancies are advertised in certain of the daily papers, but it is well for a graduate who desires anything of this kind not to wait until actual vacancies occur, but to endeavour to get his name put down, if possible, in order that he may receive early notice of any openings.

ROYAL COLLEGE OF VETERINARY SURGEONS.

10, Red Lion Square, W.C.,

July, 1905.

At meetings of the Board of Examiners held in London on July 10th for the Written, and on and between 11th and 14th for the Orals and Practicals, the following gentlemen passed their Final Examination:—Messrs. A. C. Anderson, R. S. Audas, W. Anderson, W. A. Broad, W. T. Brookes, R. F. Bett, F. W. Chamberlain,

A. Chisholm, L. Danels, A. Douglas, J. R. Hewer, T. Hicks, H. A. Lake, G. O. Ogden, F. T. Prince, C. C. Parsons, S. Speer, G. G. Sooby, W. H. Simpson, W. K. Townson, W. H. Taylor, H. S. Ward.

The following passed their Third Examination :—Messrs. T. Bell, L. L. Balls, W. G. Blackwell, W. P. B. Beal, E. R. Blamey, S. Carless, P. L. Edwards, J. Forrest, R. L. L. Hart, *M. Henry, *C. Hartley, E. V. Hobbs, P. J. Kerr, *V. C. Leekie, *T. Lishman, H. Morphew, E. R. Nicholls, †A. W. N. Pillars, A. C. Perkins, G. B. C. Rees Mogg, Sidney Smith, †A. L. Sheather, C. P. Wellington, J. P. Welham, R. C. Wilkinson, W. R. R. Wakeham, T. Ware, J. S. Young.

The following passed their Second Examination :—Messrs. H. J. Allen, J. M. Armfield, W. D. Allan (Edinburgh), W. E. Blackwell, E. H. Brogan, A. B. Bowhay, *C. M. Barton, L. B. Cole, D. R. Chatterley, H. M. Holland, *H. S. Hughes, J. H. G. Jerrom, G. W. Lucking, S. J. Motton, P. S. Morgan, A. J. S. Reynolds, D. H. Rylands (Liverpool), G. Tillyard, H. Tay, W. Waters, G. Yates.

The following passed their First Examination :—Messrs. G. E. Atkinson, M. A. Burstein, *J. D. Browne, V. G. Balls, J. R. Couchie, V. S. M. Cope, *G. W. Dunkin, G. St. G. F. Drake, *H. V. Dier, D. Evans, A. B. Fewings, *H. Gooch, G. W. Godwin, †G. E. Henson, G. N. A. Hall, V. P. Littler, *W. H. Andrews, *W. B. Littler, J. Martin, *E. Measures, *H. B. Nixon, E. M. K. Nicholls, *J. C. S. Powell, E. S. Pindar, †F. M. Reynolds, *T. V. Somerville, †A. W. Shilston, W. Sewell, *W. B. Towell, E. G. Turner, †S. B. Vine.

At the recent Examinations held in Dublin the following gentlemen passed the Final, and were admitted members of the Royal College of Veterinary Surgeons :—

Royal Veterinary College of Ireland :—Messrs. J. T. Clinton, J. J. Fleury, T. Fleury, T. Flynn.

Liverpool University Veterinary School :—Mr. R. C. Allinson.

The following gentlemen passed Class C at the Royal Veterinary College of Ireland :—Messrs. G. J. Bell, S. Black, J. Crowley, *H. Gibson, C. M. Griffin, *A. Hodgins, F. Markham, C. A. Phipps, T. Russell, R. Stirling, A. C. Taylor.

Liverpool University Veterinary School :—Messrs. J. Smith, P. Thexton.

The following gentlemen passed Class B at the Royal Veterinary College of Ireland :—Messrs. F. R. Kelly, B. L. King, W. J. Moran, W. C. Barry, A. Hutchins, F. S. Ringwood, C. H. Lambert, *A Monro.

Liverpool University Veterinary School :—Messrs. R. H. Oddy, J. Rigby.

The following gentlemen passed Class A at the Royal Veterinary College of Ireland :—Messrs. D. Barry, T. T. Bogne, T. A. B. Cocksedge, *W. Devane, *J. Devlin, J. Doran, E. C. Doyle, S. H. Ewing, *J. D. Ferguson, *J. E. Fitzgerald, *J. Winckworht, J. A. Gibbons, *J. McKittrick, †J. McBirney, *E. McSwiney, P. J. Malone, †D. T. Mitchel, E. Mulligan, *F. C. Ryan, F. Shearman, A. Snodgrass.

Liverpool University Veterinary School:—†Messrs. Burndred, Burton, P. D. Carey, Hoddinott, H. S. Sowerby, W. S. Walker, *T. Woods.

ARTHUR WM. HILL, *Secretary.*

Marked thus (*) passed with 2nd Class Honours. Marked thus (†) passed with 1st Class Honours.

Correspondence.

"ULCERATION OF THE STOMACH": A CORRECTION.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—In reference to my article on "Ulceration of the Stomach," in the June number, the last paragraph should read as follows:—

"The ulcerated portions of the stomach looked very suspiciously like 'cancerous' lesions," etc. (*not "kunkur" lesions*, as printed).

I shall be glad if you will kindly publish the correction, as it is one of the most important points in the case.

Thanking you in anticipation,

Faithfully yours,

A. S. WILLIAMS, Capt., A.V.D.

Books and Periodicals, &c., received.

Cape Agricultural Journal; Veterinary Diagrams (Wilkie); Merck's Annual Report; Irish Farming World; Veterinary News; Johns Hopkins Hospital Reports and Bulletin; Board of Agriculture Returns; Returns of the Department of Agriculture for Ireland; Report of the Imperial Cancer Research Fund; London University Gazette; National Veterinary Association Essays; Trypanosomes (Capt. Pallein); Annual Report of the Chief State Veterinarian of Dakota; Journal of the Royal Army Medical Corps; Bulletin Veterinaire; Observations on Filarial Embryos found in the circulation of Equidæ and Bovidæ (Lingard); Journal of Experimental Medicine; Farm and Home; Receuil de Med. Vet.; Revista de Medicina Veterinaria; Fortschritte der Veterinar Hygiene; Archiva Veterinaria (Bucharest); Untersuchungen über die Klinische und backteriologische Fretetellong der Tuberkulose des Rinds (Osterteg).

Letters and Communications, &c.

Major Pease; Capt. Sullivan; Mr. W. H. Williamson; Mr. A. Rogerson; Messrs. Knoll & Co.; Capt. Pallin; Jeyes' Sanitary Co.; Prof. J. McCall; Mr. Hill; Mr. Haskell; Prof. Kendall; Mr. Livesey; Messrs. Arnold & Sons; Mr. Burr; Mr. A. Young; Mr. Simpson; Mr. Gregory; Mr. G. C. Lowe; Mr. Joseph Carter; Prof. Andrew Smith; Prof. Dewar; Lieut. Nicholas.

NOTE.—All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C. Telephone, 4646 Gerrard. Telegrams, "Baillière, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements), should be addressed to the Editor.

Manuscript—preferably type-written—should be on one side only of paper, marked with full name of author.

Illustrations for reproduction should be in good black or dark brown on white paper or card.

Advertisements and all business matters relating to the JOURNAL should be addressed to the publishers, Messrs. Baillière, Tindall and Cox.

All authors desiring reprints of their articles will be supplied with copies free of charge upon requesting same within a week of publication of the JOURNAL.

COLONEL JOSHUA ARTHUR NUNN, C.I.E., D.S.O., F.R.C.V.S., F.R.S.E., F.R.G.S.

COLONEL NUNN was born on May 10, 1853, and is the eldest son of the late Edward Westly Nunn, Esq., J.P., and Deputy-Lieutenant of Hill Castle, co. Wexford, Ireland. He was educated at Rugby, Wimbledon School, the Boulogne-sur-mer College, and the Royal Veterinary College, London, taking his Diploma in January, 1877. He entered the Army on April 21 of the same year, being appointed Veterinary Surgeon in the Royal Artillery direct from the Royal Monmouthshire (Royal Engineers) Militia, in which regiment he had served as a lieutenant from 1871. Colonel Nunn was, we believe, the first officer who entered the Army Veterinary Department who had previously held a combatant commission in the Auxiliary Forces; he was also the last who entered it as a Regimental Veterinary Surgeon, the departmental system by which officers were gazetted to the Army Veterinary Department and not to any particular regiment being introduced shortly afterwards.

Colonel Nunn proceeded to India in 1877, and was stationed at Jullunder, in the Punjab, till the outbreak of the Afghan War in 1878, serving in both phases of it in charge of the Royal Artillery and lines of communication in the Kyber Pass between Gundamuck and Cabul.

On the proclamation of peace in November, 1880, his services were placed at the disposal of the Civil Government of the Punjab, on account of the great losses that were taking place amongst the post horses and bullocks on the grand trunk road between Jhelum and Peshawar and Kohat.

Both glanders and rinderpest were rife, and the work of stamping them out over the enormous stretch of country that the two trunk roads run through was very great; however, the task was successfully accomplished. Colonel Nunn's services were then placed permanently at the disposal of the Punjab Government as Consulting Veterinary Surgeon. He travelled several times over the whole of the province in connection with the suppression of cattle diseases and the improvement of the local breeds of horses and cattle. He first introduced any regular system into the management of the large cattle fairs in the Punjab, which, up to then, had been left in the hands of natives, but on his representation a proper code of regulations was brought out by which the revenue derived from tolls, sales, &c., was greatly increased. He also compiled a valuable series of reports on the different breeds of cattle in the Punjab. Through his representations of the want of native assistants, the Punjab Veterinary College was founded at Lahore; and there is no doubt that Colonel Nunn was the pioneer of the present Civil Veterinary Department in India. Owing to hardship and exposure his health broke down, and in 1885 he had to leave India and come home.

He was stationed at Glasgow for a short time, where he read for, and obtained, the Fellowship degree, and intended taking out a medical qualification at the Glasgow University, but was prevented

by being deputed on special duty to South Africa to investigate the South African horse sickness. For this purpose he went through special training at the laboratory of the Brown Institute under Dr. E. Klein, at Cambridge under the late Professor Roy, and in Paris under M. Pasteur. He left for South Africa in December, 1886, returning in 1888. Although his mission was unsuccessful as far as discovering a cure for the disease, it was not barren of results, as he was able to show that horse sickness was a disease *per se*, and not anthrax, as at that time generally supposed.

During the time he was in South Africa the Zulu rebellion broke out in 1888, and he served with the coast column proceeding to the Great St. Lucia Lagoon, where the paramount chief, Sombeli, was captured by Colonel McKean. He was only in England a few weeks, and returned to India in 1889. He carried on an investigation for the Assam Government, demonstrating the existence of "Surra" in horses and mules in both that province and Cachar, and served as Principal Veterinary Officer on the Chin-Lushai Expedition in Eastern Bengal, 1889-1890.

He was appointed Principal of the Punjab Veterinary College, Lahore, on July 1, 1890, which post he retained till October, 1896, when he resigned the appointment, as he did not desire to join the Indian Civil Veterinary Department, and his health had again given way. On the outbreak of the South African War, Colonel Nunn was appointed personal assistant to the Director-General, and subsequently Deputy Director-General of the Army Veterinary Department, which post was abolished by the Army Council last year.

Colonel Nunn is in possession of the Afghan and North-West Frontier of India medals, with a clasp for the Chin-Lushai Expedition, during which he was granted the Distinguished Service Order. He is a companion of the Most Eminent Order of the Indian Empire, this decoration being given to him for work done for the Punjab Government in a civil capacity and for his services in connection with the Punjab Veterinary College.

He is a Fellow of the Royal College of Veterinary Surgeons, and also of the Royal Geographical Society, and the Royal Society of Edinburgh; one of the Examiners in Hygiene for the Diploma of the Royal College of Veterinary Surgeons, and the Examiner in Veterinary Jurisprudence and Toxicology for the Diploma in Veterinary Hygiene of the University of Liverpool; a Barrister-at-Law and a member of Lincoln's Inn, being called to the Bar in 1899. He took up the study of law late in life as an amusement, but says he has never regretted it or the hard work it entailed. On the resignation of the post by Professor W. Owen Williams, Colonel Nunn became editor of the VETERINARY JOURNAL, of which he had formerly been the sub-editor; he founded and edited the *Veterinary News*, although his name, for obvious reasons, has only lately appeared on it.

He has travelled extensively on the Continent, India, Australia, New Zealand, Japan, China and South Africa, is a good linguist and keen sportsman, being well known in the Vale of Aylesbury with the Whaddon Chase and Lord Rothschild's staghounds; has shot, fished and played polo in foreign lands, and in his younger days was not unknown between the flags. He belongs to the Conservative and

the Junior United Service Clubs, and is unmarried. He has been appointed Principal Veterinary Officer in South Africa, and sailed for Cape Town a few weeks ago, but has not entirely severed his connection with the VETERINARY JOURNAL, his translations and extracts from foreign literature being continued as before.

We wish Colonel Nunn good luck and good sport in his new appointment, and a speedy return to the happy hunting-grounds of the Midlands.

IN continuation of our last month's educational number, which was intended principally for the benefit of the intending student, we are occupying a portion of this month's issue with a brief summary of the degrees and diplomas which the qualified M.R.C.V.S. may obtain, and the post-graduate courses by which he may refresh his knowledge and thus keep up to date in the latest scientific theories. A few years ago the Fellowship was the only one obtainable; now a man may make quite a choice, as a perusal of the following will show. The present-day student, if he holds the London University Matriculation Certificate, may take his Bachelor of Science Degree in Veterinary Science whilst attending the London Veterinary College for his Diploma of Membership, and we understand that similar facilities are shortly to be extended by the University of Edinburgh to those who prefer to study in the Dick College. The graduate whose inclination takes him into general practice can take the Fellowship, whilst for those who select the Public Health Services the Universities of Victoria and Liverpool offer their Diplomas in Veterinary State Medicine (D.V.S.M.) and Veterinary Hygiene (D.V.H.) respectively. Honorary titles and prizes are occasionally conferred by the Council of the Royal College of Veterinary Surgeons; the former upon some distinguished veterinary surgeons of other nationalities who may be elected Honorary Associates, and the latter in the shape of the Steel Memorial Medal, which is conferred from time to time upon some English graduate whom they deem worthy of the honour for his original work in the service of the profession.

POST-GRADUATE DIPLOMAS, DEGREES AND HONOURS.

FELLOWSHIP DIPLOMA (F.R.C.V.S.).

THE Fellowship of the Royal College of Veterinary Surgeons is a higher degree than the membership, and Fellows only can be elected to fill the post of examiner for the Diploma of the Royal College of Veterinary Surgeons. The following are the rules as to the examination :—

Examination of Fellows.

At the same time as the other examiners are elected, and subject to the same conditions, the Council shall appoint a special Court of Examiners consisting of three members, for the purpose of examining candidates for the degree of Fellow.

An examination for the degree of Fellow may be held at such times, and in such places, as the Council shall from time to time appoint, provided there be at least two examinations held during the year, in the months of May and December, and the fees paid to the Secretary of the College prior to the examination taking place.

The subjects and regulations for the examination in the degree of Fellow shall be as follow :—

The examination shall be taken in the following order and consist of—

(1.) A thesis to be accepted or rejected by the examiners.

(2.) A written examination on the following subjects :—

(*a*) Veterinary Medicine and Surgery.

(*b*) Veterinary Hygiene and Sanitary Science.

(*c*) Pathology and Bacteriology (recognition of specimens microscopically and macroscopically).

(3.) A defence of the thesis by the candidate before the whole of the examiners.

A candidate when sending his thesis shall sign a declaration that it is his own production ; he shall also acknowledge all quotations obtained from books and pamphlets.

The thesis to be signed by a motto only, and accompanied by the name and address of the candidate enclosed in a sealed envelope.

At least twenty-eight days prior to the date fixed for the examination every candidate shall forward his thesis to the Secretary, who shall then forward all theses received to the Chairman of the Examining Board, or to such of the examiners as he may nominate.

The written papers to be numbered by the Secretary.

Any distinguishing mark on the thesis or written papers shall disqualify the candidate.

The examiner shall place against each answer the number of marks awarded.

There shall be four questions in each subject, three of which must be answered.

The examiner in Pathology shall send four specimens, two microscopical and two macroscopical.

One hour and a half shall be allowed for each written paper and one hour for the recognition of specimens.

Passage of papers, reference to books or documents, talking, or copying will entail immediate dismissal from examination.

The President of the Royal College of Veterinary Surgeons or a delegated member of the Council shall attend and act as chairman of the Board of Examiners.

No communication shall be made by the examiners of anything that takes place at the examinations, except in writing to the Council.

The marks shall be a maximum of 100 in each subject, and an

aggregate of 60 per cent. shall be obtained. Failure to obtain 30 per cent. in any one subject will disqualify.

In the event of a thesis of a candidate being accepted, and he fail to obtain the necessary qualifying number of marks in the written examination, he shall not be required to furnish a new thesis on again presenting himself for the written examination.

In view of an examination the Secretary shall apply to the examiners for questions and specimens; the questions shall then be printed and distributed to the candidates at the examination.

A candidate, on making application to be admitted to the Examination for the Fellowship degree, shall send to the Secretary the following form of certificate signed by three Fellows of the College.

> We hereby certify that Mr. , of , a Member of the Royal College of Veterinary Surgeons, has been engaged in the practice of his profession for five years and upwards, and is a fit and proper person to be examined for the Fellowship of the Royal College of Veterinary Surgeons.
>
> Witness our hands this day of 19 .

All theses and examination papers shall be retained by the Secretary until otherwise determined by the Council, and no person shall have access to them except by order of the Council.

The fee on admission to the degree of Fellow shall be £15 15s.

When the candidate sends in his thesis it shall be accompanied by an entrance fee of five guineas, and on passing the examination and receiving the diploma he shall pay a further sum of ten guineas.

The fee to be paid on such re-examination shall be five guineas.

Every member of the Court of Examiners shall be entitled to such fees as shall from time to time be fixed by the Council.

The priority of Fellows whose diplomas bear the same date shall be determined at each Examination by their place in the list sent in by the Court of examiners.

DIPLOMA IN VETERINARY HYGIENE (D.V.H.).

A DIPLOMA in Veterinary Hygiene is granted by the Liverpool University to members of the Royal College of Veterinary Surgeons. This diploma has not been long in existence, but no doubt in future either it or some similar one will be required from candidates for Government appointments. The regulations regarding the course of study and examinations are:—

ORDINANCE FOR DIPLOMA IN VETERINARY HYGIENE.

(1) The University shall grant a Diploma in Veterinary Hygiene (written D.V.H.), which shall be awarded in pursuance of a resolution of the Senate.

(2) The diploma shall be awarded only to candidates who possess the registrable qualification to practise Veterinary Medicine, and who further present certificates of having attended approved courses of study, and pass the prescribed examination.

Regulations for Diploma in Veterinary Hygiene.

(1) The examination for the diploma shall be held twice yearly, and the first examination shall be held at the end of the Summer Term, 1904.

(2) Candidates before presenting themselves for the examination, and subsequent to having obtained the registrable qualification to practise Veterinary Medicine, shall have attended courses in the University in

(*a*) Veterinary Hygiene.
(*b*) Comparative Pathology and Bacteriology.
(*c*) Parasitology.
(*d*) Veterinary Toxicology and Jurisprudence.

They shall have attended during not less than six months the University clinique or cliniques for infectious diseases of animals, and they must further produce satisfactory evidence of having practically studied out-door sanitation and inspection in relation to Veterinary Hygiene.

(3) The subjects of examination shall be:—

(*a*) Hygiene as applied to Veterinary Medicine.
(*b*) Microscopy as applied to Veterinary Medicine.
(*c*) Comparative Bacteriology, Pathology, and Parasitology.
(*d*) Toxicology and Jurisprudence.
(*e*) Aetiology of infectious diseases of animals.
(*f*) Sanitary Law and Administration.
(*g*) Sanitary Reporting.
(*h*) Infectious Diseases—Case reporting.

(4) The fee for the examination for the Diploma shall be £5 5s.

Outline of Courses of Study.

The organised courses for the Diploma commence in October, and as a general rule this is the best time for the candidates to start, as the examination may be entered for at the end of the following term.

A course of instruction suitable for the Diploma will, however, be given in the Summer term.

Fees.—A composition fee of £15 15s. may be paid for the whole of the classes and clinical instruction required, or the classes may be taken separately at the fees specified below in each case. The University fee of £5 5s. for the examination for the Diploma is additional to these fees.

Veterinary Hygiene.

Professor: E. W. Hope, M.D., D.Sc.
Lecturer: T. Eaton Jones, M.R.C.V.S.

This course consists of about thirty lectures and demonstrations.

The lectures will be given on Mondays and Thursdays, from 9 till 10 a.m. The times for the practical demonstrations will be notified.

Syllabus of Lectures and Demonstrations.

Introductory.—Chemical and physical laws. Water supplies, impurities and their effects.

Purification.—Air composition, impurities and their effects.

Ventilation.—Air space, warming, lighting, &c.

Meteorology.—Climate, weather, meteorological instruments.

Building.—Site, aspect, materials, construction, reading of plans.

Refuse and its Disposal.

Food.—Composition, energy, dietetics, adulteration, diseases due to food, meat and its infection, milk and its diseases.

Specific Diseases.—Infection, prevention.

Statistics.—Sanitary Laws, Byelaws, and Regulations.

Practical Outdoor Sanitary Work will include :—Sanitary supervision and inspection of stables, shippons, and milkshops, etc. Administration of Contagious Diseases (Animals) Acts. Infectious Diseases of Animals: special means to investigate outbreaks of disease; course of legal proceedings; regulations and keeping of records of Veterinary Departments; refuse destructors; disinfector; sewage farm, &c.

Fee—£5 5s.

Comparative Pathology and Bacteriology.

Lecturer: H. E. Annett, M.D., D.P.H.
Demonstrator: W. Jowett, F.R.C.V.S., D.V.H.

This is a practical course of four months' duration. The class meets in the afternoon, and the work includes about forty lectures and practical demonstrations.

Syllabus.

Bacteriology, General.—Nutrient Media; Sterilization; Filtration; Disinfection; Examination of Air, Fluid, Soils, and Foods; Cultivation; Action of Chemical and Physical Agents; Morphology and Reproduction; Bacterial products; Modes of infection; Mode of action of Pathogenic Bacteria; Attenuation and exaltation of virus; Vaccines and Sera.

Special.—The bacteriology of infectious diseases of animals. Hæmorrhagic septicæmiæ. The Pasteurelloses. Infections with the coli group. Gastro-enteritides. Avian diphtheria. Anthrax. Malignant œdema; Symptomatic anthrax; Bradsot; Pleuro-pneumonia; Horse Sickness; Cattle Plague; Foot and Mouth Disease; Vaccinia; Horsepox; Cowpox; Sheeppox; Tuberculosis; pseudo-tuberculosis; Glanders; Strangles; Mammitis of cattle; Botryomycosis; Actinomycosis; Necrosis; Pyelonephritis of Cattle; Epidemic abortion; Cerebro-spinal meningitis; Rabies; Tetanus, &c.

Fee—£6 6s.

Parasitology.

This is a practical course of instruction of about twenty lectures and demonstrations, which follows the course on Comparative Pathology and Bacteriology.

SYLLABUS.

The course includes a description of the life, history, appearance, detection, and lesions produced by parasites.

Parasitology.—Parasites of the skin; Digestive system; Serous membranes; Respiratory organs; Circulatory system, muscles, connective tissue, and bones; Nerve centres and genito-urinary organs.

Special Parasites of the Blood.—Pyroplasmoses of cattle, horse, sheep and dog. Surra, Nagana, Dourine, Mal de Coit, Mal de Cadera, Trypanosomiasis of rats, of Gambian horse, of man, &c.; their life histories, and the lesions they produce.

Fee—£4 4s.

ANIMAL TOXICOLOGY AND JURISPRUDENCE.

Dr. Buchanan.

Professor: W. Owen Williams, F.R.C.V.S., F.R.S.E.

This course consists of about ten lectures and demonstrations in the principles of the Toxicology and Jurisprudence of Veterinary Practice, and of practical instruction in the detection of poison.

Fee—£2 2s.

CLINICAL INSTRUCTION IN INFECTIOUS DISEASES OF ANIMALS.

Lecturer on Clinical Veterinary Medicine: H. Sumner, M.R.C.V.S.
Lecturer on Clinical Veterinary Surgery: Stafford Jackson, M.R.C.V.S.
Lecturer on Clinical Veterinary Hygiene: T. Eaton Jones, M.R.C.V.S.

Cases of infectious diseases in animals will be obtained for diagnosis, reporting and clinical instruction. The course will extend over six months.

Fee—£3 3s.

LABORATORIES.

The Diseases of Animals Department forms part of the recently erected Johnston Laboratories, and are closely associated with the laboratories of the Liverpool School of Tropical Medicine, of Cancer Research, Bio-chemistry, and General Pathology and Bacteriology.

DIPLOMA IN VETERINARY STATE MEDICINE (D.V.S.M.).

A COURSE of lectures for a Diploma in Veterinary State Medicine has been recently instituted by the Victoria University of Manchester, this being given only to those who are already members of the Royal College of Veterinary Surgeons. Like the Diploma of Veterinary Hygiene of the Liverpool University, it is especially intended for those who intend to take up Meat Inspection and Public Health work.

The courses begin in October and consist of (1) Lectures on

Veterinary Hygiene, between October and December; (2) the course of Comparative Pathology, from January to March; (3) the practical classes of Bacteriology and Chemistry, either from October to December, or from April to July; (4) candidates must also study the practical duty of veterinary inspection with a veterinary surgeon recognised by the University.

Comparative Pathology and Bacteriology.

Professor Delépine, Mr. Sidebotham and Dr. A. Sellers.

This course consists of lectures, demonstrations and practical classes.

I. Lectures and demonstrations, Tuesday and Friday, at 3 o'clock, from October to December.

From January to March, etiology of infectious diseases of the lower animals, with special reference to public health and to veterinary state medicine. (D.P.H. and D.V.S.M. course: the public health students need not attend the lectures on animal diseases which are not communicable to man.)

II. Practical Bacteriology, Tuesday and Friday, from 3.45 to 5.30, from October to December and from April to July.

(*a*) Methods of staining, cultivating and isolating pathogenic micro-organisms.
(*b*) Sterilisation and disinfection methods.
(*c*) Methods used in the examination of air, water, soil, &c.

III. Practical Pathology, Parasitology and Microscopy, Tuesday and Friday, from 3.45 to 5.30 p.m., from January to March. In this part of the course the following subjects will be treated:—

(*a*) Recognition of the most important parasites and of the lesions which they produce in man and in the lower animals.
(*b*) Contaminations of food.
(*c*) Microscopical impurities of air and water.
(*d*) Microscopical examination of articles of clothing.
(*e*) Practical instruction in meat inspection. In connection with this part of the course, Mr. A. Holburn, Chief Veterinary Inspector, gives practical demonstrations at the city abattoirs to members of the class.

Fees.	£	s.	d.
For the complete course (six months)	7	7	0
For each term of three months	4	4	0
For lectures and demonstrations without practical classes, two terms	3	3	0
For Practical Bacteriology, Practical Microscopy and Inspection of Food, with lectures, during the second winter term only (D.V.S.M. course) ...	5	5	0

Gentlemen who have taken the course and wish to practise methods may be admitted to the Laboratory on payment of a fee of £2 2s. per month.

Pathological and Bacteriological Laboratories.

The Bacteriological Laboratory will be open every afternoon, Saturdays excepted, during the winter and summer sessions, to students who wish either to devote more special attention to the study of micro-organisms than can be given in the ordinary practical class, or to pursue original investigations.

Fees.

	Weekly Attendance.			
	2 afternoons.	5 afternoons.	2 days.	5 days.
	£ s.	£ s.	£ s.	£ s.
For 3 months ...	4 4	6 6	5 5	10 10
„ 6 „ ...	6 6	10 10	9 9	15 15
„ 9 „ ...	8 8	13 13	12 12	18 18
„ 12 „ ...	10 10	15 15	14 14	21 0

Research students are allowed the use of all ordinary apparatus and reagents, but must contribute towards the cost of exceptional reagents, apparatus, &c., except in such cases as the director may determine.

Chemistry.

Professor Dixon, Professor Perkin and Mr. Chapman.

Laboratory Course. Sanitary Chemistry.

The course consists of two portions :—

(1) Practical work with special reference to the examination of air, water and foods, on Tuesday and Friday from 1 to 3 p.m. for six months, either October to March, or January to July.

(2) A Course of Demonstrations on Physical Chemistry to be held twice a year on days to be fixed after consultation with the class.

Fee for both courses, £7 7s. (which includes use of apparatus).

Candidates who have taken these courses may attend the Laboratory for one month at a fee of £2 2s.

Veterinary Hygiene.

Lecturer: Mr. William Woods, F.R.C.V.S.

Tuesday, at 5.30 p.m., from October to December, at the Public Health Laboratories, York Place.

Air: quality, quantity, impurities, influence of bad atmosphere on disease; ventilation; construction of stables, cowsheds, pigsties, kennels; drainage; disposal of refuse. Water: quality, quantity, sources of supply, contamination and disease produced thereby.

Food: grasses, cereals, roots, &c., composition, adulteration, nutritive relations and equivalents, digestibility, energy.

Quantities and preparation of foods.

Legislation: Dairies and cowsheds.
Contagious diseases.
Anthrax.
Glanders.

Disinfection, fumigation, &c.

Fee for the lectures, £2 2s.

Practical Instruction in the Duties of Veterinary Inspectors.

Mr. A. Holburn, M.R.C.V.S., Chief Veterinary Inspector for Manchester, and Mr. J. W. Brittlebank, M.R.C.V.S., Veterinary Inspector for the Public Health Department, Manchester, will, subject to the sanction of the municipal authority, give to members of the class of Veterinary Hygiene the opportunity of inspecting with them abattoirs, markets, dairies, farms, &c. The times of these visits will be announced in advance at the Laboratory.

A list of veterinary inspectors with whom similar instruction can be obtained in various other districts is kept by the director of the Laboratory, who will be pleased to give information to gentlemen wishing to avail themselves of these facilities. (See Regulations for the D.V.S.M.)

Diploma in Veterinary State Medicine.

Ordinances.

1. The University shall grant a Diploma in Veterinary State Medicine (D.V.S.M.) which shall be awarded by the Senate.

2. The examination shall be in two parts and shall be written, oral and practical.

3. Candidates, before entering for the first part of the examination, must have held for not less than twelve months the membership of the Royal College of Veterinary Surgeons, and must present satisfactory certificates.

(1) That, after obtaining the membership of the Royal College of Veterinary Surgeons, they have attended an approved course of instruction in Veterinary Hygiene in the University, or in a college recognised for this purpose by the University.

(2) That, after obtaining the membership of the Royal College of Veterinary Surgeons, they have during at least six months received practical instruction in laboratories recognised by the University, in Chemistry, Bacteriology and Pathology, as applied to Veterinary Hygiene.

4. Candidates, before entering the second part of the examination, must present certificates.

That, after obtaining the membership of the R.C.V.S., they have during six months (of which at least three months shall be distinct and separate from the period of laboratory instruction required under (2) been diligently engaged in acquiring a knowledge of the duties of veterinary inspection under a veterinary surgeon (holding a public appointment), to be approved of for that purpose by the University. This requirement may be modified by the Senate in the case of veterinary inspectors who have held an appointment recognised by the University for not less than one year.

5. Candidates may present themselves for Parts I. and II. separately, or at the same time, provided that no candidate be admitted

to Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination.

6. Candidates must satisfy the examiners in the following subjects:

Part I.

(*a*) Practical Chemistry;
(*b*) Practical Pathology, Parasitology and Microscopy;
} With special reference to Veterinary Hygiene.

Part II.

(*a*) Comparative Pathology;
(*b*) Hygiene, Sanitary Law and Administration;
(*c*) Sanitary Reportnig.
} With special reference to Veterinary Hygiene.

Regulations for Examination.

1. The subjects of examination shall be:—

Part I.

(1) Practical Chemistry, with special reference to Veterinary Hygiene.

(*a*) Methods of qualitative and quantitative analysis, with special reference to the examination of air, water, soil and foods.
(*b*) The principles of warming and ventilation.
(*c*) Meteorological instruments and their use.

(2) Practical Pathology, Parasitology and Microscopy.

(*a*) Practical Bacteriology, including bacteriological analysis of air, water, foods and soils. Disinfection and sterilisation.
(*b*) Recognition of animal parasites.
(*c*) Morbid Anatomy of lesions associated with parasitic diseases (characters of diseased meat).
(*d*) Microscopical impurities of foods, air and water.

Part II.

(1) Comparative Pathology of domesticated animals.
Pathology of Epizootic diseases and of diseases due to unwholesome food, air, water. Influence of housing, climate, season, soil. Geographical distribution of diseases. Artificial and natural immunity. Effects of heredity on liability to disease.

(2) Veterinary Hygiene.
Construction of stables, byres, pig-sties, kennels, &c. Hospitals. Abattoirs. Methods of ventilation, drainage, disposal of refuse. Foods. Water Supply. Methods of transport.

(3) Sanitary Law and Administration.
Control of contagious diseases under the provisions of the Contagious Diseases of Animals Act. Statutes and bye-laws.

(4) Inspection of meat, dairies, cowsheds, farms, &c. Sanitary reporting.

2. The examination in Part I. shall include :—

(1) A four hours' practical and oral examination on Chemistry, the principles of warming and ventilation, and the use of meteorogical instruments, with special reference to Veterinary Hygiene.

(2) A four hours' practical and oral examination on Pathology, Bacteriology and Microscopy, with special reference to Veterinary Hygiene.

The examination in Part II. shall include :—

(1) A three hours' written examination on the Comparative Pathology of Domesticated Animals.

(2) A three hours' written examination upon Veterinary Hygiene, Sanitary Law and Administration.

(3) Sanitary reporting.

(4) Oral examination on the subjects in Part II.

3. The fee for each part shall be £3 3s. and must be paid on or before December 15th. For any subsequent examination in the same part the fee will be £2 2s. Every candidate who has passed both parts of the examination and is a veterinary surgeon will receive a diploma in Veterinary State Medicine (D.V.S.M.).

UNIVERSITY OF LONDON.

QUITE recently the University of London have established a B.Sc. degree in Veterinary Science, and the following are the regulations for "external" students. This can be taken by the student who has passed the London Matriculation Examination, at the same time that he is graduating from one or other of the recognised Colleges. A synopsis of the curriculum and scheme of examination for "internal" students, which is very similar to that for the "external" students, can be obtained on application to the Registrar of the University :—

VETERINARY SCIENCE.

DEGREE OF BACHELOR OF SCIENCE (B.Sc.).

Candidates for the degree of Bachelor of Science as external students in Veterinary Science shall be required to have passed the Matriculation Examination (unless admitted under Statute 116), and to pass four subsequent examinations as follows :—

(*a*) An examination at the end of the first year after matriculation in Inorganic Chemistry and Physics.

(*b*) An examination taken one year after (*a*) in Organic Chemistry, Biology, and Veterinary Anatomy.

(*c*) An examination to be taken one year after (*b*) in Veterinary Physiology.

(*d*) An examination to be taken two years after (*b*) in Veterinary Pathology and Veterinary Hygiene.

(*e*) The examination may, at the choice of the candidate, be postponed till the end of the fourth year, when (*c*) and (*d*) may be taken together; but no candidate taking these examinations at the same time will be held to have passed the Final examination unless he has also passed the Intermediate examination, Part II.

Certain exemptions in respect of these examinations may be obtained on application to the University, as follows:—

(1) In respect of Matriculation.

(2) In respect of the Preliminary Examination.

(i) Candidates who have passed at a Preliminary Scientific Examination in Physics or Inorganic Chemistry will be exempted from examination in the subject or subjects in which they have passed.

(ii) Candidates who have passed in Inorganic Chemistry or Physics at the Intermediate Examination in Science or Agriculture or at the Degree Examination in Science will be exempted from examination in all the subjects in which they have passed.

(Candidates who have passed in Chemistry at the Degree Examination in Science will be exempted from examination in Inorganic Chemistry at the Preliminary Examination, and in Organic Chemisty at the Intermediate Examination (Part I.).

(3) In respect of the Intermediate Examination in Veterinary Science (Part I).

(i) Candidates who have passed in Biology at a Preliminary Scientific examination will be exempted from the examination in this subject.

(ii) Candidates who have passed in both Botany and Zoology at the Intermediate Examination in Science or Agriculture or at the Degree Examination in Science will be exempted from examination in Biology.

(iii) Candidates who have passed in Organic Chemistry at the Preliminary Scientific Examination, or at the Intermediate Examination in Medicine, or in Chemistry at the Degree Examination in Science will be exempted from examination in Organic Chemistry.

Note.—No exemption in Biology at the Intermediate Examination in Veterinary Science (Part I.) will be granted to students who have not passed in both Botany and Zoology.

Preliminary Examination in Veterinary Science.

The Preliminary Examination in Veterinary Science for external students shall take place twice in each year, commencing on the third Monday in January, and on the second Monday in July.

No candidate shall be admitted to this examination within nine months of the time of his passing the Matriculation Examination or of having been admitted under Statute 116.

Every candidate must apply to the External Registrar for a form

of entry on or before May 24th, which must be returned on or before June 1st for the July examination, *or* must apply for a form of entry on or before December 15th, which must be returned on or before December 22nd for the January examination.

Every candidate entering for the Preliminary Examination in Veterinary Science must pay a fee of £4 to the External Registrar. If a candidate withdraws his name before the last day of entry to the examination the fee shall be returned to him. If he fails to present himself at the examination he shall be allowed to enter for the *next following* Preliminary Examination in Veterinary Science on payment of a fee of £2. If he retires after the commencement of the examination, or fails to pass it, the full fee of £4 shall be payable upon every re-entry.

Candidates must present themselves for examination in both Inorganic Chemistry and Physics. If they fail in one subject only they will be permitted to present themselves for re-examination in that subject alone. The fee for re-examination in a single subject will be £2.

Intermediate Examination in Veterinary Science.

Part I.

The Intermediate Examination in Veterinary Science takes place twice in each year, commencing on the third Monday in January, and on the second Monday in July.

No candidate shall be admitted to this examination within one academical year of the time of his passing the Preliminary Examination in Veterinary Science.

Every candidate must apply to the External Registrar for a form of entry on or before May 24th, which must be returned on or before June 1st for the July examination, or must apply for a form of entry on or before December 15th, which mnst be returned on or before December 22nd for the January examination.

Every candidate must pay a fee of £5 to the External Registrar. If a candidate withdraws his name before the last day of entry to the examination the fee shall be returned to him. If he fails to present himself at the examination he shall be allowed to enter for the next following Intermediate examination in Veterinary Science (Part I.) on payment of a fee of £2 10s. If he retires after the commencement of the examination, or fails to pass it, the full fee of £5 shall be payable upon every re-entry.

Candidates who have failed in one subject only at this examination may offer themselves for re-examination in that subject, if permitted to do so by the examiners, upon payment of a fee of £2.

Candidates shall be examined in (*a*) Organic Chemistry, (*b*) Biology, and (*c*) Veterinary Anatomy.

Part II.

The Intermediate Examination in Veterinary Science (Part II.) shall take place once in each year in November, at the same time as the B.Sc. Pass Examination in Physiology in the Faculty of Science.

No candidate shall be admitted to this examination within one academical year of the time of his passing the Intermediate Examination in Veterinary Science, Part I.

Candidates may postpone this examination until the second year after passing the Intermediate Examination in Veterinary Science (Part I.), and may then take this examination and the Final B.Sc. Examination in Veterinary Science together.

Every candidate must apply to the External Registrar for a form of entry on or before September 18, which must be returned on or before September 25, accompanied by a satisfactory certificate of good conduct.

Every candidate entering for the Intermediate Examination in Veterinary Science (Part II.) must pay a fee of £5 to the External Registrar. If a candidate withdraws his name before the last day of entry to the examination the fee shall be returned to him. If he fails to present himself at the examination he shall be allowed to enter for the *next following* Intermediate Examination in Veterinary Science (Part II.) on payment of a fee of £2 10s. If he retires after the commencement of the examination, or fails to pass it, the full fee of £5 shall be payable upon every re-entry.

B.Sc. Examination.

The B.Sc. Examination in Veterinary Science shall take place once in each year in November, and shall commence on the day following that on which the Intermediate Examination in Veterinary Science (Part II.) commences.

Every candidate for this examination shall be required to have passed the Intermediate Examination in Veterinary Science (Part I.) at least two academical years previously.

Every candidate must apply to the External Registrar for a form of entry on or before September 18, which must be returned on or before September 25, accompanied by a satisfactory certificate of good conduct.

Every candidate entering for the B.Sc. Examination must pay a fee of £5 to the External Registrar. If a candidate withdraws his name before the last day of entry to the examination the fee shall be returned to him. If he fails to present himself at the examination he shall be allowed to enter for the next following B.Sc. Examination on payment of a fee of £2 10s. If he retires after the commencement of the examination, or fails to pass it, the full fee of £5 shall be payable upon every re-entry.

Candidates shall be examined in (*a*) Veterinary Pathology, and (*b*) Veterinary Hygiene.

Candidates shall not be approved by the examiners unless they have shown a competent knowledge in—

(1) Veterinary Pathology.
(2) Veterinary Hygiene.

At 2 o'clock on Friday in the fourth week after the examination the External Registrar shall publish a list of the candidates who have passed, arranged in alphabetical order.

A diploma for the degree of B.Sc. in Veterinary Science under the

seal of the University, and signed by the Chancellor, will be delivered to each candidate who has passed, after the report of the examiners shall have been approved by the Senate.

ORDER OF THE EXAMINATIONS AT THE B.Sc. EXAMINATION IN VETERINARY SCIENCE.

Written Work.

First day, Veterinary Pathology, 10 to 1 and 2 to 5.
Second day, 10 to 1, Veterinary Hygiene.

PRACTICAL EXAMINATION.

Candidates will be informed at the commencement of the written examination of the times at which their attendance will be required for practical work and oral examination.

NOTE.—By the term "academical year" is ordinarily meant the period intervening between any examination and an examination of a higher grade in the following year; which period may be either more or less than a calendar year.

A full syllabus with detailed particulars can be obtained on application to the Registrar, London University, South Kensington, S.W.

STEEL MEMORIAL MEDAL.

THE Steel Memorial Medal is awarded by the Council of the Royal College of Veterinary Surgeons, as a reward for scientific or literary work of merit connected with the profession, and can only be given to a graduate of the veterinary profession.

It was designed to perpetuate the memory of a very unselfish and enthusiastic worker in the profession, the late Mr. John Henry Steel, M.R.C.V.S., F.Z.S., whose much regretted and untimely death occurred in 1890, at the early age of thirty-five years.

The medal is a very handsome one of bronze, and bears on the obverse side an excellent portrait of Mr. Steel, and on the reverse the Arms of the Royal College of Veterinary Surgeons, whilst the name of the recipient is deeply engraved around the edge.

Up to the present the recipients have been as follows:—

1896. Mr. J. F. Simpson, F.R.C.V.S.
1897. Professor McFadyean, M.B., B.Sc., M.R.C.V.S., F.R.S.E., and Major (now Colonel) Fred Smith, F.R.C.V.S., F.I.C.
1898. Dr. George Fleming, LL.D., F.R.C.V.S., and Principal W. Williams, F.R.C.V.S., F.R.S.E.
1899. Professor McCall, F.R.C.V.S., and Professor Hobday, F.R.C.V.S., F.R.S.E.
1900. Professor Dewar, F.R.C.V.S., and Professor Mettam, B.Sc., M.R.C.V.S.
1901. Mr. William Hunting, F.R.C.V.S.

At this date it was decided by the Council that the medal should, in future, be of silver and only awarded once in every three years.

POST-GRADUATE COURSES.

POST-GRADUATE courses, open only to qualified veterinary surgeons and medical men, are now available at the London College, at the Veterinary School of the Liverpool University, and at Cambridge University Medical School.

They are especially adapted to the requirements of members of the Army Veterinary Department, Colonial veterinary surgeons, and veterinary inspectors under the Contagious Diseases of Animals' Act, and include particularly Pathology and Bacteriology.

REGULATIONS OF THE COURSE IN THE LONDON COLLEGE.

Lecturer: Professor McFadyean, M.B., B.Sc., M.R.C.V.S., F.R.S.E.

Demonstrator: Mr. Dodd, M.R.C.V.S.

Post-graduate courses, open only to qualified veterinary surgeons and medical men, in Veterinary Pathology and Bacteriology, will be held in January, February, and March, and in October and November of each year.

The hours of instruction will be from 10 to 4 o'clock daily (Saturdays excepted), with an interval of one hour (1 to 2 o'clock).

These courses will be essentially practical, the object being to afford to each member of the class the technical skill necessary to apply bacteriological knowledge in the investigation, diagnosis, and treatment of the micro-parasitic diseases of the domesticated animals, and in meat inspection.

To this end instruction will be given regarding—

The general principles of bacteriological research.

The preparation of culture media and staining reagents.

The general principles of vaccination and protective inoculation.

The preparation of bacterial toxins and vaccins.

The special bacteriology of the causal organisms of anthrax, quarter-evil, malignant œdema, glanders, epizootic lymphangitis, tuberculosis, actinomycosis, tetanus, swine fever, swine erysipelas, swine pneumonia, fowl cholera, strangles, discomycosis, suppuration, calf diphtheria, ringworm, &c.

The pathology of Texas fever, Nagana or Tsetse-fly-disease, Surra, African Coast fever, African horse sickness, &c.

Each member of the class must provide for his own use a suitable microscope, with a $\frac{1}{12}$ oil immersion lens, but all the other instruments and accessories necessary for the work of the class will be provided by the College.

The fee for each course, payable in advance, is £10 10s.

UNIVERSITY OF CAMBRIDGE.

Medical School. Long Vacation.

Course for Senior Students, Medical Men and Veterinary Surgeons.

This course includes the following :—

(1) Lectures and demonstrations on Protozoa and Protozoal Diseases, by G. H. F. Nuttall, M.A. (Christ's College), Tuesdays and Thursdays, July 4 to August 3. 10 a.m. to 12 noon.

(2) Lectures and demonstrations on Pharmacology, by W. E. Dixon, M.A. (Downing College), Tuesday, July 4, and the four following Tuesdays, at 2.30.

(3) Lectures and demonstration on general and special Pathology, by Professor Woodhead; H. E. Durham, M.B. (King's College); W. Malden, M.B. (Trinity College); and G. S. Graham Smith, M.B. (Pembroke College); on Mondays, Wednesdays, and Fridays, 10.15 to 12.30.

These were the dates of the lectures during this present year :—

Tuesday, July 4.—The carriers of certain Protozoal Diseases, their structure, biology, dissection, &c., Mosquitoes. G. H. F. Nuttall. Bronchial Asthma, its mode of production and treatment. W. E. Dixon.

Wednesday, July 5.—Phagocytosis, its nature and pathological importance; Functions of (*a*) Microphages; (*b*) Macrophages; "Opsonins"—General observations. Professor Woodhead.

Thursday, July 6.—Tsetse Flies and Ticks; Protozoa and the diseases they cause. G. H. F. Nuttall.

Friday, July 7.—Diphtheria. G. S. Graham Smith.

Monday, July 10.—Diphtheria. G. S. Graham Smith.

Tuesday, July 11.—General characters of Protozoa. Parasitism; Amœbina (Amœbic Dysentery, &c.); Mycetozoa (plant diseases). G. H. F. Nuttall. Vaso-constriction and its effect in the treatment of disease. W. E. Dixon.

Wednesday, July 12.—Opsonins (continued). Toxins and Antitoxins of Diphtheria; specific character, mode of production and action; Venins and anti-venins. Professor Woodhead.

Thursday, July 13.—Mastigophora, various parasitic and other species including Trypanosomata. G. F. H. Nuttall.

Friday, July 14.—The Iodophil reaction in blood, its nature, demonstration, pathological significance and diagnostic importance. W. Malden.

Monday, July 17.—Ehrlichs' Side Chain Theory compared with Opsonin Theory; Metchnikoff's views. Professor Woodhead.

Tuesday, July 18.—Trypanosomiasis, Sleeping Sickness, Kalatnazar, Oriental Sore, &c. G. F. H. Nuttall. The specific action of drugs; the relation of tolerance to immunity. W. E. Dixon.

Wednesday, July 19.—Methods of standardising antitoxins and antivenins. Professor Woodhead.

Thursday, July 20—Spirochæta (relapsing fever and various animal diseases). G. H. F. Nuttall.

Friday, July 21.—Results of Antitoxin tests; Use of hæmatocrit and coagulometer. Professor Woodhead.

Monday, July 24.—Illness due to unsound foods: Infection and Intoxication. H. E. Durham. Lecture on Immunity (in the afternoon), by G. H. F. Nuttall.

Tuesday, July 25.—Gregarinida, Coccidia (Coccidiosis in man and animals). G. H. F. Nuttall. The action and therapeutic value of adrenalin. W. E. Dixon.

Wednesday, July 26.—Agglutinins and agglutination methods; sources of error. G. S. Graham Smith. Lecture on Immunity (in the afternoon), by G. H. F. Nuttall.

Thursday, July 27.—Hæmosporidia (Malaria in man and animals). G. H. F. Nuttall.

Friday, July 28.—Precipitins and Hæmolysins; Methods; Isotonic solutions; colometric measurement of hæmolysins. G. S. Graham Smith.

Tuesday, August 1.—Piroplasmata (Redwater), &c. G. H. F. Nuttall.

Wednesday, August 2.—Glandular activity and the influence of therapeutic agents upon it. W. E. Dixon.

Thursday, August 3.—Neosporidia (Researches on small-pox, scarlatina, &c); Infusoria. G. H. F. Nuttall.

THE UNIVERSITY OF LIVERPOOL.

Tropical Medicine.

The course of lectures in the above subject, originally intended for medical men, has recently been adapted in order to meet the requirements of the veterinary practitioner who chooses his future sphere of action in some tropical country.

The subjects taken include:

(*a*) Tropical Pathology and Parasitology.
(*b*) Tropical and Applied Bacteriology.
(*c*) Tropical Hygiene and Sanitation.
(*d*) Tropical Medicine, including Aetiology, Symptoms, Diagnosis, and Treatment of Tropical Diseases.

Outline of Courses of Study.

The organised courses commence in May, but students may enter at either the Lent, Summer or Autumn terms.

Tropical Pathology and Hygiene.

The three months' course is divided into

(1) Lectures in Tropical Medicine and Hygiene.
(2) Practical Parasitology and Bacteriology.

1. *Tropical Medicine and Hygiene.*

Professor Ross, F.R.C.S., F.R.S., C.B.

This course consists of lectures held daily at 12 noon.

Syllabus.

(1) Medical zoology; especially the life-history of the more important parasites connected with tropical medicine. Ten lectures.

(2) The history, symptoms, pathology, diagnosis, treatment, prognosis, epidemiology, and prevention of malarial fever, blackwater fever, kala azar, piropeasmiasis, trypanosomiasis, filariasis, ankylostomiasis, bilharziasis, yellow fever, relapsing fever, plague, undulant fever, tropical typhoid, dengue, other fevers, beriberi, ptomaine poisonings, hill diarrhœa, sprue, cholera, dysentery, tropical liver and abscess, intestinal parasites, yaws, craw-craw, mycotema, various parasitic and skin diseases, other diseases. Thirty lectures

(3) Personal and domestic prophylaxis, state sanitation, including organisation, statistics, conservancy, refuse disposal, surface drainage, sewage disposal, water supply, food supply, epidemics. Ten lectures.

Note.—Lectures are frequently delivered by research workers who have conducted original investigations on tropical disease.

2. *Practical Parasitology and Bacteriology.*

J. W. W. Stephens, M.D., Cantab., D.P.H.,
Walter Myers Lecturer in Tropical Medicine.

The course consists of practical class-work held in the laboratory daily at 10 a.m.

SYLLABUS OF PRACTICAL WORK.

PROTOZOA.

1. *Rhizopoda.*

Amœbina, *e.g.*, Amœba Coli.

2. *Flagellata.*

Protomonadina, *e.g.*, Trypanosomidæ, Cercomonidæ.
Polymastigina, *e.g.*, Trichomonidæ.

3. *Sporozoa.*

Coccidia, *e.g.*, Developmental cycle. C. cuniculi.
Hæmosporidia, *e.g.*, Laverania malariæ, etc.
Eugregarinaria, *e.g.*, Developmental cycle.
Amœbosporidia, *e.g.*, Ophryocystis.
Myxosporidia, *e.g.*, Myxobolus.
Microsporidia, *e.g.*, Nosema. Pébrine.
Sarcosporidia, *e.g.*, Sarcocystis.

4. *Ciliata.*

Balantidium.

5. *Unclassed.*

Spirilla.
Leishmania donovani.

PLATYHELMIA.

1. *Trematoda* (Flukes).

A general knowledge of the class and their life-history, especially the following:—Distomidæ, especially Distomum and its sub-genera, and Shistosoma (Bilharzia).

Amphistomidæ, *e.g.*, Gastrodiscus.
Monostomidæ, *e.g.*, Monostomum.

2. *Cestoidea* (Tape worms).

A general knowledge of the class, especially the following families and genera :

Bothriocephalidæ, *e.g.*, Bothriocephalus.
Tæniidæ, *e.g.*, Tænia. Bladder worms.

3. *Nematoda* (Thread worms).

Especially the following families and genera :—
Ascaridæ, *e.g.*, Oxyuris.
Strongylidæ, *e.g.*, Uncinaria (Ankylostomum).
Trichotrachelidæ, *e.g.*, Trichina.
Filariidæ, *e.g.*, Filaria.
Anguillulidæ, *e.g.*, Rhabditis.
Echinorhynchidæ.
Gigantorhynchidæ.

ARACHNOIDEA.

Acarina.

(1) Argasidæ.
(2) Ixodidæ, especially Rhipicephalus (Boophilus).
(3) Anatomy, life-history of ticks, nymphæ, larvæ, ova.
(4) Sarcoptidæ, *e.g.*, S. scabiei.
(5) Liguatulidæ, *e.g.*, Linguatula.

DIPTERA.

The blood-sucking species and those that give rise to myiasis. General characteristics of diptera, and mode of differentiation.

(1) Culicidæ, the sub-families Anophelina, Culicina, Megarinina, Joblotina, Heptaphlebomyina, Ædeomyina, Corethrina. Especially Anophelina and its genera ; Culicina, *e.g.*, Stegomyia, and Culex.

Psychodidæ, *e.g.*, Phlebotomus.
Simulidæ, *e.g.*, Simulium.
Tabanidæ, *e.g.*, Tabanus.
Œstridæ, *e.g.*, Œstrus.
Sarcophagidæ, *e.g.*, Sarcophaga.
Muscidæ, *e.g.*, Glossina.
Hippoboscidæ, *e.g.*, Melophagus.
Pulicidæ (fleas), *e.g.*, Pulex, Sarcopsylla.
Anatomy of mosquitoes, dissection, pupæ, larvæ, ova.

BACTERIOLOGY.

Bacteriology of dysentery, cholera, plague, leprosy, typhoid, malta fever, mycetoma, etc.

Cultivation of bacilli from dysenteric, choleraic dejecta, etc.

The above syllabus is given as an example of the subjects embraced and of the character of the work, and is not to be considered as in any way complete or inclusive.

LIBRARY AND MUSEUMS.

The Library contains current periodical literature devoted to the subject of tropical diseases, and all important monographs and text-books are added as they appear.

The Museum contains a collection of microscopic and macroscopic specimens. There is a large collection of classified mosquitoes and other blood-sucking and pathogenic diptera. There is also a very large collection of worms.

Collection of Living Blood Parasites.

The Laboratory possesses living examples of all the chief Trypanosomata. Fresh animals are constantly arriving from the Tropics, and students have at all times the advantage of examining living parasites. The following is a list of these parasites, which will vary from time to time.

In the Laboratory *living* examples of the chief parasites are constantly available, *e.g.* :—

(1) The blood parasites of birds—proteosoma, filaria, the so-called halteridium.

(2) The hæmogregarines and trypanosomata of frogs.

(3) The trypanosomata of fish (as occasion offers).

(4) The trypanosomata of mammals. The following are always available :—

(*a*) *T. gambiense* (Dutton) of man.
(*b*) *T. ugandense*, Uganda sleeping sickness.
(*c*) Trypanosome of Congo sleeping sickness.
(*d*) *T. dimorphum* trypanosome of the Gambian horse.
(*e*) *T. brucei*, "Ngana."
(*f*) *T. equiperdum*, "Dourine."
(*g*) *T. equinum*, "Mal de Caderas."
(*h*) *T. evansi*, "Surra."
(*i*) *T. lewisi*.

(5) Filaria perstans.

(6) Worms and their ova, from man, monkeys, chimpanzees, are always to be obtained.

(7) Anophelina and Culicina Eggs, larvæ and adults, according to the season of the year. Ticks from various regions are kept alive in the laboratory.

(8) In the Veterinary department, *living* material of pathological interest is always available.

Other living parasites are obtained from time to time as the opportunity offers.

THE ROYAL SANITARY INSTITUTE.

The Sanitary Institute, which was founded in 1876, and is situated at the Parkes Museum, Margaret Street, W., has instituted courses of lectures for the practical training of those who wish to become inspectors of meat, and it has established centres for the examination of candidates in various parts of England and the Colonies. The dates and places of the examinations during the present winter for the inspectors of meat and other foods are as follows :—

Leeds	March 17 and 18.
London	May 12 and 13.
Manchester	June 30 and July 1.
Cardiff	October 27 and 28.
London	December 15 and 16.

The Colonial examinations are held at: Hong Kong; Sydney, N.S.W.; Montreal, Canada; Hobart, Tasmania; Cape Town; Perth, Western Australia.

A number of veterinary surgeons have availed themselves of this course and taken the certificate of the Sanitary Institute as an additional qualification for public health work.

The particulars of the examination for inspectors of meat and other foods are as follows:—

The Report of the Royal Commission on Tuberculosis recommends that in future no person be permitted to act as a meat inspector until he has passed a qualifying examination; and the Local Government Board, in an order issued upon this Report, suggest that in large districts, where the work is sufficient, a separate officer should be appointed, and the Authority should satisfy themselves that the person appointed possesses adequate knowledge of the subject mentioned in the recommendation of the Royal Commission.

The Council of the Royal Sanitary Institute, who have since the year 1877 been holding qualifying examinations for the office of Sanitary Inspector, arranged in December, 1899, to hold examinations for this purpose also, and the syllabus, which includes the subjects specified in the Report of the Royal Commission, has been submitted to the Local Government Boards of England, Scotland, and Ireland, who have expressed their satisfaction with the sufficiency of the syllabus set out for examinations.

The Council have thought it desirable to include in the syllabus for the examinations the subjects of which a knowledge is necessary for the inspection of other articles of food besides meat, so as to cover the whole field of food inspection.

	Examinations.	Candidates Entered.	Candidates Certificated
To July, 1905 ...	24 ...	306 ...	215

REGULATIONS.

A candidate for the examination, unless otherwise qualified,[1] must hold a certificate as Sanitary Inspector or Inspector of Nuisances from the Royal Sanitary Institute or some other recognised examining body.

He also must produce evidence of having had training in meat inspection for two months at a cattle market and slaughtering establishment recognised by the Institute, or some equivalent training approved by the committee, and also of having studied the subjects of examination.

[1] A British veterinary or medical diploma is recognised as a qualification.

He is required to furnish the Board of Examiners with satisfactory testimonials of recent date as to age and personal character; these should, if possible, be from a clergyman, a medical man, or some one holding an official position.

Application for examination must be made on the proper form, and must be sent to the office of the Institute fourteen days before the date of the examination at which the candidate wishes to present himself.

The fee payable is £3 3s. It must be paid to the Secretary: 10s. 6d. on making application, and the remainder at least one week before the day of examination.

The examination occupies a portion of two days. On the first day it is in writing, and consists of two written papers, two hours being allowed for each. On the second day the examination is practical and *viva voce*.

A candidate on passing the examination will be granted a certificate of competency to discharge the duties of an inspector of meat and other foods.

A certificate is not granted to any candidate under 21 years of age.

An unsuccessful candidate is allowed to present himself a second and a third time for examination within two years of his first application, on payment of half fees; but in every case the candidate must make application on the prescribed form previous to presenting himself for examination.

In order to make the examinations more accessible to candidates, the Council have arranged for them to be held in various centres during the year.

Syllabus of Subjects.

A knowledge of the laws, bye-laws, and regulations affecting the inspection and sale of meat and other articles of food, including their preparation and adulteration.

Signs of health and disease in animals destined for food, when alive and after slaughter.

Tuberculin and other tests.

The names and situations of the organs of the body in animals.

The distinctions between the parts and visceral organs of different domestic animals.

Size, weight, and form of the organs of ox, cow, horse, sheep, calf, pig.

Position of lymphatic glands.

The appearance and character of fresh meat, organs, fat, blood, fish, poultry, milk, fruit, vegetables, and other food, and the conditions rendering them, or preparations of them, fit or unfit for human consumption.

The hygiene of byres, lairs, cowsheds, and slaughter-houses, and all places where animals destined for the supply of food are kept.

The hygiene of markets, dairies, and other places where food is stored, prepared, or exposed for sale.

Practical methods of stalling and slaughtering animals, preserving and storing meat and other foods.

LECTURES AND DEMONSTRATIONS.

THE Eighth Course of Practical Training for Meat Inspectors for candidates preparing for the Examination for Inspectors of Meat and other Foods will commence on Friday, September 29th, at 6.30 p.m., and will consist of systematic practical training in the inspection of meat at a cattle market, including demonstration on live cattle and sheep, slaughtering and dressing of animals, names and situations of the organs, diseases of animals, methods of stalling, arrangement of markets and byres, &c.

Demonstration will also be arranged at a knackers' yard, where instruction regarding the flesh and organs of the horse will be given.

The course will continue for two months.

Demonstrations will be given at the Institute on Friday evenings and at a market on Saturday afternoons.

In addition to the practical training at a market, the course will include the following lectures given in the Parkes Museum, Margaret Street, W., at 7 p.m., on :—

Monday, November 20th.

Signs of Health and Disease in Animals destined for food, when alive and after slaughter. Tuberculin and other tests.—W. Hunting, F.R.C.V.S.

Wednesday, November 22nd.

The Names and Situations of the Organs of the Body in Animals.—W. Hunting, F.R.C.V.S.

Thursday, November 23rd.

Diseased Meat with a Demonstration of Morbid Specimens collected from meat markets.—James King, M.R.C.V.S., Veterinary Inspector, Metropolitan Cattle Market.

Friday, November 24th.

Practical Methods of Stalling and Slaughtering Animals.—W. Hunting, F.R.C.V.S.

Monday, November 27th.

The Appearance and Character of Fresh Meat, Organs, Fat, Blood, Fish, Poultry, Milk, Fruit, Vegetables, and other food, and the conditions rendering them, or preparations of them, fit or unfit for human consumption. Preserving and Storing Meat and other Foods.—E. Petronell Manby, B.A., M.D., D.P.H., Medical Inspector, Local Government Board.

Wednesday, November 29th.

The Hygiene of Byres, Lairs, Cow Sheds, and Slaughter Houses, and all places where animals destined for the supply of food are kept, and the Hygiene of Markets, Dairies, and other places where food is stored, prepared, or exposed for sale and transported.—E. Petronell Manby, B.A., M.D., D.P.H., Medical Inspector, Local Government Board.

Thursday, November 30th.

The Laws, Bye-Laws, and Regulations affecting the inspection and sale of Meat and other articles of Food, including their preparation and

adulteration—E. Petronell Manby, B.A., M.D., D.P.H., Medical Inspector, Local Government Board.

The fee for the two months' course of practical training will be £3 3s., or for the complete course, including the lectures and demonstrations at the Parkes Museum, £3 13s. 6d.

Members and Associates of the Institute are admitted to the course of lectures and demonstrations for sanitary officers without payment, but those wishing to attend this course of Practical Training for Meat Inspectors would be required to take a ticket for the course (£3 3s.).

Students who enter for the examination can have 10s. 6d. carried towards their fee.

The Special Course of Practical Training in Food and Meat Inspection for Commissioned Officers and Professional Men preparing for the Examination for Inspectors of Meat and other Foods, conducted by the Royal Sanitary Institute.

The course will commence on Wednesday, November 22nd, at 5 p.m., and will consist of practical training in the inspection of foods and meat, including demonstration on live cattle and sheep, slaughtering and dressing of animals, names and situations of the organs, diseases of animals, methods of stalling, arrangement of markets and byres, &c., at a cattle market.

Demonstrations will also be arranged at a knacker's yard, where instruction regarding the flesh and organs of the horse will be given.

The course will be arranged as follows:—

Six Lectures and Demonstrations by James King, M.R.C.V.S., on Meat Inspection.

1905.

On Wednesday, Nov. 22nd;	In Parkes Museum, at 5.30 p.m.
On Friday, Nov. 24th;	
On Monday, Nov. 27th;	
On Wednesday, Nov. 29th;	
On Tuesday, Nov. 28th;	At Metropolitan Cattle Market, at 3 p.m.
On Saturday, Dec. 2nd;	

Two Lectures by Prof. H. R. Kenwood, M.B., D.P.H.

In the Parkes Museum at 5 p.m.

Thursday, November 30th.
Tinned and Potted Food.

Friday, December 1st.
Milk, Butter, and Cheese.

Four Lectures by Colonel J. Lane Notter, M.A., M.D., D.P.H., R.A.M.C.

In the Parkes Museum at 5 p.m.

Monday, December 4th.

Fish, Eggs, Tea, Coffee, Cocoa and Chocolate, Lime Juice.

Tuesday, December 5th.

Wheat, Rice, Arrowroot and other Grains, Potatoes, Flour, Bread, Biscuits, Sugars.

Wednesday, December 6th.

Succulent Vegetables and Fruits, Jams. The Condiments: Vinegar, Pepper, Mustard, Prepared, Concentrated, and Preserved Foods.

Thursday, December 7th.

Alcoholic Beverages: Beer, Wines, Whisky, Brandy, &c.

Friday, December 8th.

Visit to Factory for preparation of Concentrated and Preserved Foods.

In addition to the special lectures the students will have the privilege of attending the following lectures and demonstrations (in connection with the course for sanitary officers), given in the Parkes Museum, Margaret Street, W., at 7 p.m., on—

Wednesday, November 29th.

Inspection and Demonstration at Harrison and Barber's Knacker Yard, Winthrop Street, Whitechapel, E., at 3 p.m., conducted by R. Glover, F.R.C.V.S.

Monday, November 20th.

Signs of Health and Disease in Animals destined for food, when alive and after slaughter. Tuberculin and other tests.—W. Hunting, F.R.C.V.S.

Wednesday, November 22nd.

The Names and Situations of the Organs of the Body in Animals.—W. Hunting, F.R.C.V.S.

Thursday, November 23rd.

Diseased Meat, with a Demonstration of Morbid Specimens collected from Meat Markets.—James King, M.R.C.V.S., Veterinary Inspector, Metropolitan Cattle Market.

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Wednesday, November 29th.

The Hygiene of Byres, Lairs, Cow Sheds and Slaughter Houses, and all places where animals destined for the supply of food are kept, and the hygiene of markets, dairies, and other places where food is stored, prepared, or exposed for sale and transported.—E. Petronell Manby, B.A., M.D., D.P.H., Medical Inspector, Local Government Board.

Thursday, November 30th.

The Laws, Bye-Laws, and Regulations affecting the inspection and sale of Meat and other articles of Food, including their preparation and adulteration.—E. Petronell Manby, B.A., M.D., D.P.H.

The fee will be £4 4s. for the complete course, or for the Demonstrations on Meat Inspection only, £2 2s.

Members of the Institute are admitted to the Course of Lectures and Demonstrations for Sanitary Officers without payment, but those wishing to attend this Course of Training in Food and Meat Inspection would be required to take a ticket for the course (£4 4s.).

Students who enter for the examination can have 10s. 6d. carried towards their fee.

UNIVERSITY OF LIVERPOOL,

A DIPLOMA in Veterinary Hygiene (D.V.H.) has been awarded to Mr. J. B. Chadwick, M.R.C.V.S.

VICTORIA UNIVERSITY.

A DIPLOMA in Veterinary State Medicine (D.V.S.M.) has been awarded to each of the following successful candidates:—

Mr. J. S. Lloyd., F.R.C.V.S., Sheffield.
Mr. J. Stirling, M.R.C.V.S., Blackburn.

Clinical Articles.

A DENTIGEROUS CYST IN THE TEMPORAL BONE OF THE HORSE.

BY W. W. GRASBY, M.R.C.V.S., DAVENTRY, AND FREDERICK HOBDAY, F.R.C.V.S., KENSINGTON, W.

THE subject was a bay pony mare, four years old, which had been in the owner's possession for two years. Nothing abnormal had been noticed until the end of March, when a small discharging sinus was

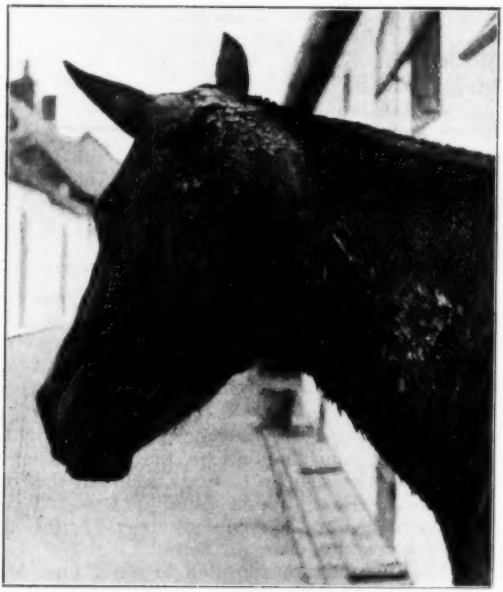


FIG. 1.—Position of the abscess and sinus.

observed at the base of the left ear. A probe could be inserted to the extent of about six inches. Within a fortnight an enormous abscess

formed, and the animal appeared in great pain, especially when the jaw was moved, as in the act of feeding. On the 22nd of April, under chloroform, the abscess was freely lanced and opened, two malformed molar-shaped odontomata teeth being removed. They were firmly fixed in the petrous temporal region, and were extracted with forceps.

The animal has since made an uninterrupted recovery, and her temper has undergone a distinct change for the better. Prior to the operation she was somewhat ill-mannered to ride (probably owing to the presence of the bridle on the region of the cyst), whereas, since the operation, all this has disappeared. For the technical description of the odontomata we are indebted to Mr. Charles Tomes, F.R.C.S., who says as follows :—

"The specimen handed to me consists of two separate hard masses, the larger of which is a little over two inches in length by one inch in width, and the smaller of irregular globular form with a flattened side (which fitted, though not very closely, against a facet upon the larger piece) measures about one and a-quarter inches across.

FIG. 2.—The odontomata after removal.

"Both pieces present a surface smooth in parts and rough in others, but nowhere, except at a few points near the top of the larger fragment, polished. This smooth, dull surface proves, on microscopical examination, to consist of cementum, and the small polished areas to be enamel. Curving inwards near the top of the larger piece are two flattened forms with crater-like edges, which suggest that they represent in an imperfect manner incisor teeth with their 'mark.'

"A section cut near the base discloses enamel and dentine arranged in a manner suggestive of its representing the patterns found upon the molar teeth of the horse, though again only imperfectly.

"The base of both fragments is uniformly rounded, and no form suggestive of the root of a tooth is found; and, although the nutrient vessels must have presumably entered in this region, no foramina can be found. Hence, so soon as the masses were completely formed, their

pulps, or what remained of them, appear to have been deprived of nutrition, and the masses must have become, except in so far as their cementum and its periosteum were concerned, dead, and so in a measure foreign bodies.

"It is possible that this may be the clue to their having been the cause of active suppuration, for it is difficult to conceive why a tooth, or masses of irregular teeth, should set up suppuration so long as they remain alive and healthy, notwithstanding that they are in a position to which they do not belong. And it is somewhat remarkable that these misplaced odontomes in the horse so often tend to reproduce, to some extent, the form of incisors and molars combined.

"Two theories as to the origin of these misplaced masses of dental tissue have been brought forward: the one that they represent portions of a second fœtus which has become included in the embryo which finally proceeded to complete development, and the other that they represent portions of the blastodermic layer which has become caught, so to speak, in a place to which it does not belong.

"In this particular case the first theory hardly calls for notice, for the situation of the mass corresponds closely to the site of one of the original branchial clefts of the embryo, into which, in normal development, the structures going to form the skin and its appendages would be inflected. Hence a portion of that embryonic layer from which teeth are ultimately produced is to be found in this situation, although in normal development it should dwindle and disappear as the cleft closes. Instead of doing so it has persisted to the extent of partially undergoing conversion into dental tissues, as though it had been in the mouth, and very possibly the branchial cleft may have remained, to some extent, open from the surface. Then, after remaining innocuous for a certain length of time, the hard masses have become a source of irritation, and suppuration has ensued which led to their detection and to the subsequent operation for their removal."

A CASE OF PARTURIENT APOPLEXY TREATED WITH OXYGEN.

Recovery after a Relapse.

BY S. E. HOLMAN, M.R.C.V.S., LEE GREEN, S.E.

The patient was a pure-bred Jersey cow with her third calf, and on arrival at 9 a.m. on May 26th I found the animal with all the symptoms of an aggravated case of parturient apoplexy.

I was told that she had calved on the previous afternoon and had received the customary bran mash, and had been well-milked out. She was lying on her side, completely comatose, the surface temperature being deathly cold, the breathing slow and oral, eyes fixed and lachrymal secretion entirely suspended. It appeared as if the case would terminate fatally before any treatment could be adopted. After having had her milked out I fully inflated the udder with oxygen, of which I had a plentiful supply. The cow was then raised on her sternum in the usual way and friction applied to the body, which was then well clothed.

A funnel was connected to the rubber tubing attached to the cylinder, and oxygen was by this means used for inhalation.

In an hour I had the satisfaction of seeing a marked improvement, the oral breathiug ceased and the lachrymal secretion returned, the eyes becoming sensitive to the touch.

In two hours the animal had sufficiently recovered to be able to hold her head up.

I now left, after ordering that the inhalation of oxygen should be continued at intervals of half an hour, until further improvement was manifest. At 5 o'clock in the afternoon I was pleased to find the cow up and eating hay.

I recommended that she should be watched during the night, but the attendants were so satisfied with the animal's condition that they left her from 2 to 7 a.m., when they found her apparently well.

I saw her at 11 a.m. on the next morning and found her to be apparently doing well, although I fancied that she looked a little drowsy.

On arrival home at 2 p.m. I was surprised to receive an urgent telephone message requesting my immediate attendance, the cow having again "dropped" and become as bad as ever.

This I found to be the case, the coma, oral breathing, &c., being as bad as before.

The attendant informed me that immediately after he had stripped the udder, as I had requested, the cow went down and became comatose.

I reinflated the udder with oxygen and used the inhalation as before, also administering a dose of caffeine hypodermically.

At 9 p.m. I found little or no improvement and administered another dose of caffeine, and continued the inhalation during the night.

I saw the case the next morning at 8 o'clock and found only a slight improvement, the surface temperature and respiratory movements being better, but the animal still being comatose. The supply of oxygen had failed at 4 o'clock. The udder was again stripped and inflated, one quarter at a time, and another dose of caffeine was administered.

At 5 p.m. I found the animal on her feet, eating hay as if nothing had happened, and the next morning she was doing well and the milk was running from all her quarters.

She was milked and her further progress was uneventful, the supply of milk being as good as at the previous calving and the udder suffering no ill effects from the repeated inflations.

It appears to me to be an open question whether the various mammary injections, used with success in this disease, have any but a mechanical effect and whether distilled water injected in sufficient quantity would not prove equally effective. I have more than once seen a relapse from too quickly stripping the udder after an apparent recovery, and it is now common experience that the non-milking of a cow for a few days after calving is one of the chief preventives of this disease, being effective in animals that have previously been the subjects of bad attacks.

I used the oxygen as an inhalation in the above case as an experiment, but am inclined to think that the cow would have done as well without it.

TWO CURIOUS ACCIDENTS.

EACH photograph shows the curious attitude in which an animal was found dead in the stable, and the position could scarcely be induced by any other than accidental means.

The first figure represents a heavy cart-mare which had fallen with the angles of her jaws on the edge of the manger. She must have died instantaneously, as there was no evidence of struggling in the peat-moss bedding. She was seven years old and had worked regularly, being very active and apparently in good health.

For the photograph and following description we are indebted to Mr. Alfred Rogerson, F.R.C.V.S.

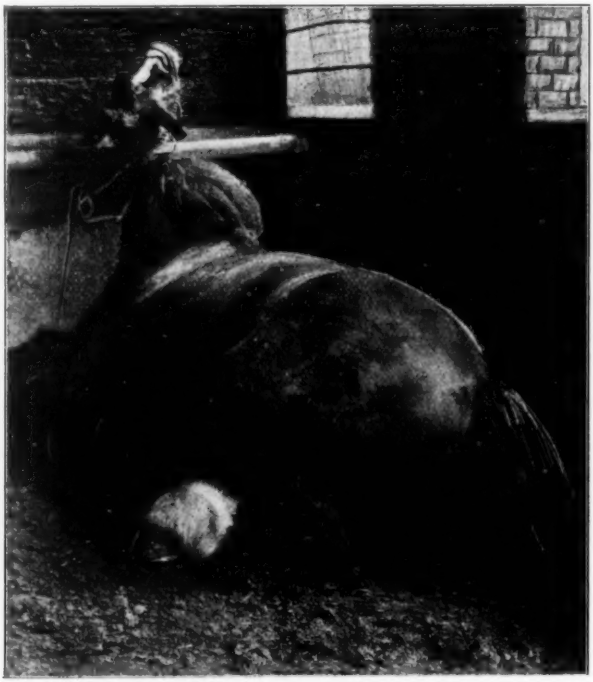


FIG. 1.—Position of the mare when found dead.

The animal was found dead in the early morning, and in the position as represented in the photograph (Fig. 1), which, on careful observation, shows the chain (which secured her to the centre of the manger by a log and dropped ring) as passing over her head, behind the ears, and, finally, in a forward direction over the peak of the nostrils. On account of this her windpipe was tightly pressed on the top edge of the manger, and death occurred from strangulation without either fracture or dislocation of any bones. The body assumed an almost natural

attitude, and there was no indication in the litter that she had made any efforts to extricate herself.

The most difficult question to answer in connection with the animal's death is, as to how she got entangled in such a manner? Was it brought about in the act of lying down or in attempting to get up after a rest?

The second photograph represents a van-gelding, aged 5 years, the property of a large firm of carriers.

During the night, whilst crib-biting, the animal had put its head over the top bar, and caught hold of the second with its teeth.

FIG. 2.—A crib-biting fatality.

The probability is that the horse slipped just at the moment of crib-biting, and was unable to regain its feet. The weight of the body caused dislocation of the neck.

For this photograph we are indebted to Mr. M. Graham, M.R.C.V.S.

TWO CASES OF DATURA POISONING IN THE HORSE.

BY CAPT. H. A. SULLIVAN, A.V.D., PRINCIPAL OF THE POONAH VETERINARY SCHOOL, INDIA.

I AM induced to place these two cases of datura poisoning on record, firstly, because such cases are, I think, rare, and secondly, because it may assist my brother officers and others serving in this country to arrive at a correct diagnosis in similar cases, for I candidly confess that in the first of these two cases my diagnosis was completely at fault, and had it not been for a similar case occurring three days afterwards, in which a horse having got loose during the night devoured the greater part of a bush of *Datura stramonium* which grew outside the stable, the true cause of the subsequent symptoms would probably have never been discovered.

Ootacamund, Sept. 5th, 1895.—I was called out to see a neighbour's horse about 10 a.m. which was reported to be unwell. On arrival at the house about half an hour later, I saw a brown waler gelding about 15.3 standing in the middle of a well-lighted loose-box, the head held straight out, a glassy stare about the eye, and the mouth slightly open.

These were the peculiarities which struck me on looking at the horse from outside the stable. On closer examination I found the pupil considerably dilated and the tongue peculiarly dry. On trying to move the patient round to the door of the box he nearly fell down, and when forced to walk round the box did so with uncertain gait, picking the feet up much higher than necessary, and occasionally knuckling over at the fetlock joint. The pulse was quick and full, and the visible mucous membranes slightly congested.

History of the Case.—The owner informed me that the horse had never been sick or sorry since he had had him, and that he had been riding him the evening before. He told me, however, that the horse had got out of the stable some time during the night, and that the syce had found him about 5 a.m. and put him back in the stable.

Having regard to the symptoms and history of the case, I diagnosed it as one of sleeping staggers, and treated it as such, the horse making a good recovery in about a week.

September 8th.—I was called out at 12 noon to see a chesnut Arab horse, which was reported to be very ill and unable to get up. On arrival at the stable I found the horse to be lying down comfortably on the sternum, the pupil much dilated, the mouth partly open and the tongue very dry. The similarity between this case and the one I had been called to see three days before, and which I was still treating, struck me, particularly the extreme dryness of the tongue, which I had never associated with sleeping staggers before.

History of the Case.—On enquiry I found that the horse, an only one, had been in regular work and had never ailed. On cross-examining the syce I found that the horse had got out during the night and had not been caught till about 6 a.m. It having rained heavily during the night, and footmarks being very visible, I was induced to try and trace my patient's peregrinations. After walking for about five minutes I came to a place where, from the footprints, the horse had stopped some time, and looking round I saw a bush of

the *Datura stramonium* (which is common in these parts), a great portion of which had been eaten.

Now the symptoms of datura poisoning are:—

(1) Paralysis of the third nerve, causing dilatation of the pupil and imperfect vision.

(2) Paralysis of the salivary nerves, causing dryness of the mouth.

(3) Paralysis of the inhibitory fibres of the vagus in the heart, leading to rapid action of the heart.

Here, then, was the undoubted solution of the mystery, and in places where this shrub is indigenous I shall ever associate that peculiar dry tongue in combination with a dilated pupil with this form of poisoning.

As regards treatment, I prescribed half a pint of a 1 per cent. solution of potass. permanganate every three hours, this drug having the important chemical property of oxydising the vegetable alkaloids, following this up with suitable doses of magnes. sulphate, and applying ordinary turpentine liniment to the lumbar regions and extremities as a counter-irritant. In forty-eight hours' time he was able to get up with a little assistance, and was put into slings, and on the eighth day had quite recovered.

It may be useful to remember in such cases that datura is precipitated by tannic acid, and the use of any decoction containing tannin, such as tea, which is strong enough to taste of the active principle, may be of value.

AN ABDOMINAL WOUND.

BY W. H. WILLIAMSON, M.R.C.V.S., WILLESDEN.

I WAS called about midnight to see a filly, 4 years old, which had been injured in the field where she was turned out. In examination I found, in the anterior part of the side of the abdomen, a punctured wound, about 1½ inches long, from which was hanging about a yard of mesentery.

Considering the case to be a very unfavourable one, I strongly advised the owner to have the animal destroyed, but this he declined to do, and insisted that I should do my best to save her. I was afraid that all I could do would be of no avail, but the owner was determined, so I proceeded to do what I could under very unfavourable circumstances.

The filly was in a barn, as surgically dirty as barns usually are, the hour was midnight, and all the help I could get was one man to hold the filly (unbroken) and one man to hold one candle, which was all the light obtainable. However, I managed to get a kettleful of boiling water, and with this and some chinosol lotion I made my hands and instruments as aseptic as circumstances permitted.

I cut off the protruded mesentery close to the skin, and, introducing my fingers into the wound, pushed back the remainder of the mesentery. I was unable to find the peritoneal wound, but the mesentery slipped away somewhere, so I inserted two strong silk sutures through the skin and underlying tissues, placing them pretty deep and taking a good hold.

Next day I expected to find my patient dead or dying, but found her feeding heartily. Pulse 56, temperature normal. I gave instructions for the cleaning and dressing of the wound, chinosol being the antiseptic used. On the following day pulse and temperature were both normal and the appetite good. On the eighth day a little pus was visible, so I removed one suture to give it vent, and on the tenth day I removed the other suture, the wound being healed.

This case is, I think, interesting as showing how guarded one should always be in giving a prognosis, and how a very unlikely case will sometimes do well.

PARAPLEGIA DUE TO FÆCAL OBSTRUCTION.

BY CAPT. H. A. SULLIVAN, A.V.D., PRINCIPAL OF THE POONAH VETERINARY COLLEGE, INDIA.

THE following case, caused by a lack of knowledge of dietetics, may perhaps be of interest.

A chesnut waler mare I was called to attend was down in her box and unable to get up. She was raised up by attendants, but was quite unable to stand without support, her hind quarters being quite paralysed.

History of the Case.—The mare had been quite well up till the evening before, but somewhat off her feed. In the early morning she was found down in her loose box, and quite unable to get up of her own will. In this position I examined her. Her pulse was full and hard, temperature normal, and she was slightly tympanitic. Rectal examination revealed a large quantity of very dry fæces, which the mare seemed quite incapable of passing. On the catheter being passed, about two quarts of urine were drawn off. The diet she had been receiving was 4 lb. oats, 3 lb. crushed barley, and 3 lb. bran, and she had only been allowed slow walking exercise morning and evening. I ordered an enema, and internally I gave her ol. tereb. ʒij. and ol. lini Oij.

During the day her rectum was emptied manually, but no attempt was made by her to pass her fæces naturally.

At 10 p.m. a second dose of ol. tereb. and ol. lini was administered, and during the night she passed fæces naturally, including one very large mass.

The next day I saw her and had her raised up, but she was still unable to stand. Feeling certain that the paralysis was due to fæcal impaction (having had similar cases in the dog), and having regard to the fact that she had passed dung voluntarily during the night, which showed me that there was no obstruction, I administerd $\frac{1}{2}$ a grain of salicylate of eserine hypodermically. Within an hour she had as many as eight motions and appeared much relieved, and the tympanitic symptoms subsided.

I got her into slings, and from this time forward she made an excellent recovery, and in the course of seven days was taking convalescent exercise.

THE USE OF ESERINE AND STIMULANTS IN THE TREATMENT OF COLIC.

BY G. C. LOWE, M.R.C.V.S., DOCKHEAD, LONDON, E.

SINCE the publication of Mr. H. C. Reeks's admirable treatise, "The Common Colics of the Horse," I have almost invariably adopted the "stimulant treatment" in cases of flatulent colic and in those of impaction of the colon. The rapidity of the patients' recovery has been so gratifying that I have altogether discarded the old "sedative treatment."

The following two simple cases, I trust, will serve to support the truth of Mr. Reeks's contention, that in such cases "the medicine administered should be essentially stimulative."

CASE I.—"FLATULENT COLIC."

On Sunday evening about 7.30 (April 9th) an aged black cart-mare (19 years) was found suffering with "colic." She had been in the stable feeding heartily since midday on Saturday. A colic mixture containing ammonia was administered by the horsekeeper soon after 7.30.

At 10 o'clock I was called. I found the large intestines considerably inflated, but not so distended as to call for immediate puncture. Pain was acute, and the mare had not passed any fæces since the onset. She was inclined to be violent. Examining *per rectum* I could not feel any obstruction or displacement.

Diagnosing the case as one of intestinal tympany, I administered: eserine sulph. (2 grs.) hypodermically, and spt. ammon. arom. (2½ oz.) as a draught (in water). The mare was allowed to walk round the box and to lie down as often as she pleased, but she was prevented from rolling. Half an hour after the administration of the medicine the mare began to pass 'wind,' and with only very short intervals continued to do so throughout the next hour. I administered a second draught of spt. ammon. arom. (2½ oz.) about an hour after the first. At the expiration of an hour and a half from the time of the hypodermic injection soft fæces began to pass freely. Soon after this all signs of pain disappeared, and the mare looked about for food.

CASE II.—"IMPACTION OF COLON."

On March 30th I was called to a grey cart-mare (nine years) that had been suffering with dull abdominal pain for about 24 hours, had refused food, and had not passed dung during that period. The mare was habitually a greedy feeder, and for the previous two or three days she had spent most of her time in the stable on full rations. Some colic mixtures containing sulphuric ether had already been administered by the owner.

I found the temperature 102-103° F., and the pulse and respiration slightly accelerated. The mare was restless and lay down frequently, but the pain did not make her violent.

Upon rectal examination I felt the large colon full of ingesta and like a doughy mass under my hand, but there was little or no tympany. Peristalsis was not perceptible, and the rectum was almost empty.

Diagnosing the case as one of impaction of the large colon, I at

once injected hypodermically eserine sulph. (2 grs.), and administered in a draught

Spt. ammon. arom.	...	2½ oz.
Tinct. nucis vom.	...	1 oz.

Subsequently, spt. ammon. arom. (2½ oz.) was administered every two hours for a period of eight hours, and tinct. nucis vom. (1 oz.) was added to the ammonia twice during that time. In the next 24 hours 2 oz. doses of spt. ammon. arom. were given five times.

Within an hour after the injection of eserine the mare became more restless, peristalsis became audible and fæces began to pass.

The restlessness, however, soon abated, and the mare, though very weak, was relieved of pain, the temperature becoming normal in a few hours. As soon as the pain disappeared she began to drink oatmeal gruel and eat a little hay. The evacuation of the intestines was very thorough. On the 3rd day (April 1st) I gave

Quinin. sulph.	...	½ dr.

in a ball every eight hours. The fæces regained their normal consistence on the fourth day (April 2nd). The mare was out of my hands on the fifth day (April 3rd).

PERITYPHLITIS IN THE DOG.

BY E. H. LIVESEY, M.R.C.V.S., HOVE, SUSSEX.

In the *Journal of Comparative Pathology* for March last I reported a case of perityphlitis, which I had only found to be present on *post-mortem* examination, after treating the dog for typhus (which he also had at the time). Since then I have had three more cases, one of which I think well worth recording.

The patient, a half-bred collie, was 15 years and 3 months old, and had had previous attacks of gastritis (or perhaps typhus). I first saw him about 10 p.m. one night, in violent pain, which I was informed was from acute rheumatism, and had been diagnosed as such by a medical man who attended at the house. The dog was panting and looking dreadfully uneasy; he cried out loudly if touched, and even endeavoured to bite, being partially paralysed in the hind legs, and scarcely able to stand. After watching him I noticed that his breathing was almost entirely pectoral and that the belly was drawn up, tense, and painful to the touch. By doubling the dog forwards on my knee I somewhat relaxed the abdominal muscles and examined the bladder, as I feared the presence of a urethral calculus or a cystitis. The bladder was normal. The dog had had no bones to eat for months and I could find no obstruction in the rectum, though the prostate was rather enlarged. In the hypogastric region, however, I could distinctly feel a lump about the size of a pigeon's egg. The situation of this, together with a history of intermittent sickness, the desire for large quantities of water, the intense pain simulating acute peritonitis and the absence of any other apparent cause, led me to diagnose an intestinal obstruction probably at the ileocæcal valve. The temperature

was raised 3°, which, after my previous experience, confirmed my belief that this was not a case of typhus, but one of typhlitis. As a temporary and preparatory measure I gave the dog morphia, withheld all food, and had hot flannels applied to the belly at short intervals during the night. In the morning, I shaved and prepared the skin of the belly and put the dog under chloroform. An incision about 2½ inches long was made in the middle line of the hypogastric and umbilical regions and the abdomen opened. Needless to say all instruments, swabs, &c., were sterilised and hands disinfected. Introducing two fingers into the abdomen I drew out the small intestine and examined its entire length, never having more than about six inches outside the body at one time. The bowel was empty, except at the ileocæcal valve, where it was much distended with impacted ingesta. The cæcum also was much distended with fæcal concretions and inflamed, though the inflammation had not, so far as I could see, proceeded as far as suppuration. There were no adhesions. By gentle and firm manipulation the concretions were either broken down or moved onwards down the bowel entire, and the ileocæcal valve freed of its contents in a similar manner. The bowel was not opened, but returned intact to the abdominal cavity and the wound stitched up with two rows of sutures; a pad and binder being applied over the site. The patient was under chloroform one hour and ten minutes, and made a good recovery. He was encouraged to drink as much water as he would, and for three days was only allowed two tablespoonfuls of raw beef and about a pint of milk. There was no further vomiting, and the wound healed well but slowly, the bowels soon regained their normal condition, the motions being regular and of proper consistence. Beyond showing a little stiffness, he is as well now as he was five years ago.

About six weeks after the operation his owner, in spite of my warnings, gave him a small chop bone, which he enjoyed as an extra luxury. Five or six hours afterwards I had to attend him for severe abdominal pain, and I feared the bone had got lodged at the site of the old trouble. However, by gentle massage, a small dose of olive oil, and large quantities of porridge (containing chopped meat as an appetiser), the "foreign body" was passed along successfully and was eventually found quite undigested in the fæces. The dog is now, five months after the operation, in good health and enjoying his old age.

This case is of special interest, I think, because of the patient's age (15 years 3 months), which I should consider in an ordinary way too old to qualify him as a "good subject." The case was also interesting to me, as it was the first time I had been lucky enough to be called in sufficiently early to make a correct diagnosis, and put the patient under proper treatment, and so prevent the case running on to abscess formation. When the latter occurs I am convinced that our cases are practically hopeless, as the abscess is almost certain to break into the peritoneum and rapidly bring a fatal termination.

ANOTHER DENTAL ANOMALY IN THE HORSE.

BY O. CHARNOCK BRADLEY, M.B., D.SC., M.R.C.V.S., PROFESSOR OF ANATOMY, ROYAL VETERINARY COLLEGE, EDINBURGH.

In a recent number of this Journal* I described the arrangement of the teeth in a horse in which the number was above the normal. In the specimen there was, on the right side of the upper jaw, an alveolus some little distance in front of the second premolar. This, I concluded tentatively, was the alveolus for a first premolar which had occupied an unusually anterior position. On the opposite side was a first premolar in the customary situation.

Within the last few weeks I have obtained another skull of a horse, in which there is a dental anomaly of some interest as throwing light upon the specimen already recorded. In the recently acquired skull the maxillary teeth on the right side offer no features of moment. A very small first premolar is present in the usual situation (see photograph, *pm*^{1}.). It is very rudimentary, and did not appear above the gum in the recent state. Its exact dimensions, however, cannot be determined with certainty, since a large proportion of it is enclosed in the bone.

It is with the maxillary teeth on the left side that we are particularly concerned. The incisors and canine are perfectly normal. (The unusual appearance of the left second incisor as shown in the photograph is solely due to *post-mortem* fracture.) Those cheek-teeth which are present in normal dentitions are also without features of interest. There is a fairly well-developed first premolar, the apex of which has been subjected to considerable wear. The main interest rests in the presence of a tooth lodged in an alveolus 25 mm. in advance of the socket for the second premolar. This has a crown, some 8 mm. in height, covered with enamel and projecting above the gum. The crown is irregularly conical in form, and the enamel has been worn off its summit. After the skull had been fully prepared, the total length of that part of the tooth projecting above the level of the bone was 16 mm. The depth of the alveolus must be considerable, since the tooth is remarkably firmly implanted. That this is not an ordinary first premolar is evident. Had the normal tooth been absent, one might have been tempted to look upon it as a misplaced, but otherwise unremakable, premolar, as was done in connection with the recorded case. Nor is it a supernumerary canine, such as has been described in other species of mammals. In all recorded cases in which the canine is duplicated the two teeth are close together. This is illustrated by the skull of an ass, described by Morot†, in which, on the right side of the upper jaw, there are two canines, one standing in front of the other, but both included in the same alveolus. Moreover, one would expect to find additional canines either in, or closely associated with, the suture between the superior maxilla and the intermaxillary bone. In our case the extra tooth is 50 mm. from this suture.

It seems much more reasonable to consider the tooth as a super-

* "On Variation in the Number and Form of the Premolars and Molars of the Horse." VETERINARY JOURNAL, May, 1905, p. 244.

† *Rec. Méd Vét.*, 1889, VII., p. 480.

numerary first premolar. Such teeth are not by any means uncommon among mammals. Those examples which have been found in animals with four premolars in the normal dentition have greater application in the present instance than have cases in animals the number of whose premolars falls short of the full mammalian complement.

In his examination of 345 skulls of the domestic dog, Hensel* discovered eleven in which the first premolar was duplicated on one or both sides of the upper jaw. In *Canis dingo*, Nehring† found two closely similar teeth lying between the second premolar and the canine on both sides of the skull. Mivart‡, likewise, found two almost

DENTAL ANOMALY IN THE HORSE.
c, c, canines—pm¹, pm¹, first premolars—* supernumerary tooth.

identical teeth in the same position on the right side of the upper jaw of *Canis lateralis*. These cases are interesting because the two teeth taking the place of the first premolar were of almost identical form and size; and more especially so because they were placed in the normal line of the teeth; that is, there was no displacement from overcrowding.

Illustrative cases, in which the first premolar was represented by

* *Morphol. Jahrbuch*, Bd. 5, 1879, p. 542.
† *Sitzungsber. d. Ges. Naturf. Freunde zu Berlin*, 1882, p. 66.
‡ *Proc. Zool. Soc. Lond.*, 1890, p. 377.

two teeth in series, could be quoted from other orders of mammalia; from which it is obvious that the occurrence is by no means rare. In the equidæ, however, I know of no case in addition to the one now described, and, if we conclude that the condition is similar, the one already recorded in this Journal.

So far as causation is concerned, it can only be concluded that, in the position of the first premolar, two dental germs have been produced instead of one. The circumstance that the two resulting teeth do not lie close together is doubtless due to that fully recognised elongation of the face which takes place after birth. Such elongation would have produced no separation of the two teeth had they attained dimensions equal to those of the other premolars and molars. As it is, their diminutive size is insufficient to fill the interval provided for their reception. Perhaps the most remarkable feature of the abnormality is the circumstance that two tooth-germs have been produced in a position in which the normal germ is so degenerate.

FOLLICULAR MANGE IN THE DOG.

BY L. DANELS, ROYAL VETERINARY COLLEGE, LONDON.

Abstract from the Second Prize Essay, Royal Veterinary College, Veterinary Medical Society, Session 1904-1905.

For many years very little has been written about this disease, the subject has been ignored and nothing has been said about it, and although the opportunities here are not very great, yet there is room for considerably more interest to be taken in it, as dogs are weekly brought here suffering from follicular mange. It is a disease easily diagnosed, but it is in connection with cure that further experiments are needed, and, as will be seen later, the reason of this resistance is obvious.

The method in which I intend to deal with the malady is as follows.

Primarily, I shall give a short *résumé* of the history of the disorder; following that the cause, its classification and description, its habit, and life history; next to that the symptoms, course and diagnosis; subsequent to these the lesions and contagiousness will be discussed; finally ending with the treatment.

I have drawn one or two diagrams to facilitate the description of the parasite, without which a lucid explanation is impossible.

The word "mange" appears to be usually restricted to itching, cutaneous, affections of the lower animals due to a parasite; we find it, however, occasionally used to denote non-parasitic affections, as in red mange, or eczema rubrum. It is derived from the French verb *demanger*, meaning to itch, which is a compound of the verb *manger*, to gnaw.

History.—Until a comparatively recent date this variety of mange was confounded with other varieties, it was not recognised as distinct, and its cause was unknown. The first mention of this variety of mange was in 1842, when there was recognised in the fatty matter

obtained by squeezing the pustules of acnea sebacea of man certain small animalcules, of which there was given a remarkable description. They were discovered to be acari, and were named *Acari folliculorum*. About the same time another observer discovered identical parasites in the cerumen or wax of the external auditory meatus. Henceforward a number of observers have sought for and discovered the parasite. Shortly after the discovery of this particular acarus in man, the corresponding one of the dog was found and described in 1843, since when numerous researchers have described the parasite and experimented with it.

(*a*) *Cause.* — The cause is named the *Demodex folliculorum*. Synonyms: *Entozoon folliculorum*, *Steatozoon folliculorum*, *Acarus folliculorum*.

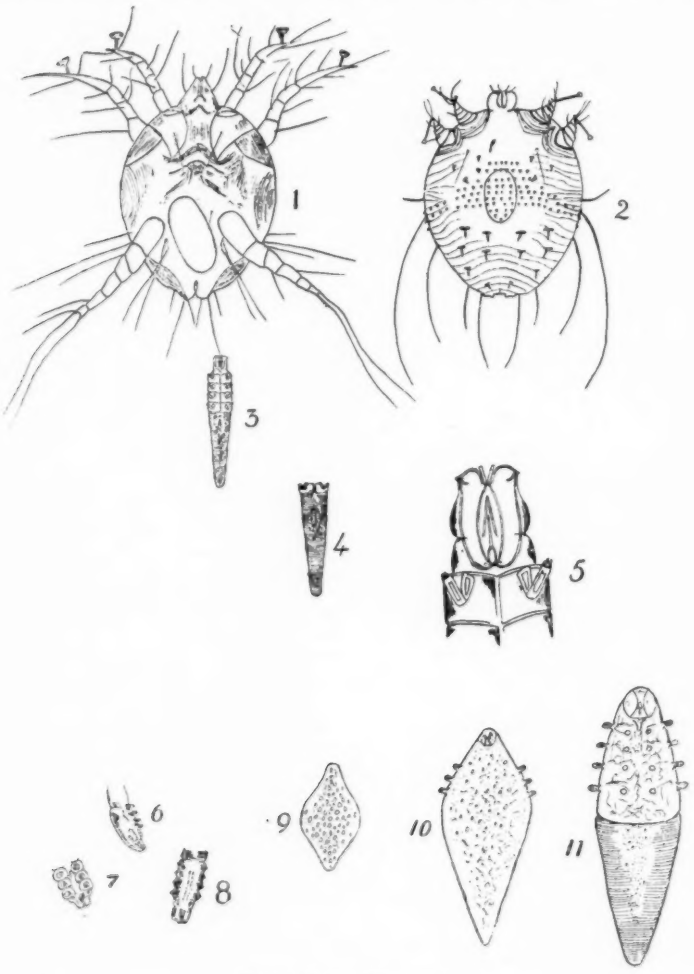
(*b*) *Classification.*—One of the subdivisions of the great class of arthropoda is the Arachnidæ. These are air-breathing animals with two pairs of masticatory appendages, four pairs of feet, no wings, and an apodous abdomen, the head usually joined to the thorax, producing the condition known as cephalo-thorax.

Of this branch there are ten orders, one of which is the "acarus." These creatures are generally of small dimensions, with short, thick, non-articulated bodies, and having head, thorax and abdomen all in one mass. In some cases, however, the head and thorax may be separated by a groove, and the thorax and abdomen may similarly be rendered distinct, and it is to this latter category that our parasite belongs.

In the great majority of parasitic forms the stigmata, or openings, on the surface of the body forming the mouths of the branching air-tubes, are absent, the respiration being cutaneous. The sexes are separate in all classes of acari. The males are fewer than the females and are distinguished by their smaller size, certain details in conformation, and the presence of copulatory organs. The acari are divided into those which are vermiform, or worm-like, and those which are not vermiform. Of the former there are two orders, viz.: the phytopidæ, which have five segments to their limbs, and the demodecidæ, which have three limb-segments. Of the demodecidæ there is one genus, the demodex, and of this one species the *Demodox folliculorum*, of which there are a few varieties, the only one concerning us being the *Demodex folliculorum var. canis*, or the *Demodex caninus*.

(*c*) *Description.*—Their bodies are glabrous, being quite destitute of trichomæ. They are distinctly divided into cephalo-thorax and abdomen, the latter being conical and elongated. The legs are short. The female measures 250 μ to 300 μ long and 45 μ broad; the male is 220 μ to 250 μ long and the same width as the female. The rostrum, which is a little narrower than the thorax, is salient in front, and about as broad as it is long, and is covered at its base by the epistoma, which is itself prolonged by two cheeks, united on the middle, and advanced to near the anterior extremity of the rostrum. The rostrum comprises: (i) a pair of mandibles, in the form of flattened and lamellar stylets, larger behind, where they are joined to the middle line, than in front, where they are slightly divergent; they are related above to the epistoma and cheeks; (ii.) a pair of maxillæ, or jaws, separated at their base, lying together in front, where they are continued by the

maxillary palpi, obscurely articulated; (iii.) a narrow tongue situated between the maxillæ and completing the floor of the mouth. The cephalo-thorax is convex superiorly and finely striated in various



CANINE MANGE PARASITES.

1.—Symbiotes auricularum. 2.—Sarcoptis canis. 3.—Demodex folliculorum. 4.—Abdomen of female. 5.—Anterior extremity of demodex, showing part of thorax, limbs and head. 6, 7, 8.—Superior, inferior and lateral views of head and thorax. 9.—Egg of demodex. 10.—Larval hexapod. 11.—Larval octopod.

directions. It is flat on the lower surface, where it shows the four pairs of legs projecting outwards from the sides.

The abdomen is elongated and conical, striated transversely, and

shows at the anterior portion of its ventral surface a longitudinal slit, the anus. This slit is larger in the female than the male, serving also for copulation and ovulation. The males have the abdomen less developed than the females and possess a genital armature situated immediately in front of the anus ; this consists of a number of chitinous pieces forming a complex general armour, which protects and directs the penis.

Their respiration is cutaneous, their circulation undetermined.

The interior of the body appears as a cellular mass, containing in the abdomen vesicles and granules.

The digestive canal commences at the mouth, and is thence succeeded by a well-defined œsophagus, which traverses the thorax and is lost in the cellular mass of the abdomen.

The movements of these acari are very limited, being mainly restricted to lateral deviations; they are, however, able to move forward in a direct path, as will immediately be shown. The legs of these animals are not built for extensive movements, they have but a few joints, are short, and devoid of that useful adjunct, an ambulacral sucker, so useful to mite-progression.

Occasionally under the microscope, they can be seen to move their legs to and fro, as though wishing to progress, but being unable to do so on account of the slippery surface afforded by the glass. If, however, they have somethiug to which they can cling, *e.g.*, a hair, they can, by extending their legs, that is by widening the angle between the haunch and tibia, and then, grasping the hair with their claws, propel themselves forward with considerable force by suddenly diminishing the just-mentioned angles of all four pairs of legs simultaneously.

(*d*) *Life History.*—The parasite is an obligatory one, that is to say, a living animal is essential for its existence, and its parasitism is continuous, needing only one host for its complete development. The parasite is oviparous.

The eggs are from 70 μ to 90 μ long and 25 μ broad, fusiform in shape, the shell is transparent, and the contents are at first granular. Incubation does not last long, probably only a few days. When the hatching process is advanced the embryo can be distinguished inside. The hatching brings into existence a larva, pyriform in shape, possessed of three pairs of legs, represented only by tubercles ; this is known as the larval hecapod, and its buccal organs are still in a rudimentary condition. This larva undergoes a moulting. It becomes inert, all its parts are reduced to a cellular mass, so that it might be described as again becoming an egg, the integument forming the shell. The new organs of the next stage are formed at the expense of the cellular mass. This first moulting brings it to the second phase of its existence, and it is now known as a larval octopod. This is characterised by the presence of four pairs of legs, still, however, represented by tubercles. Yet another metamorphosis brings the larval octopod to the nymph stage, in which it possesses the legs and buccal organs of the perfect state, from which it only differs in the absence of sexual organs in the male, the acquisition of these being the result of a fourth or last ecdysis.

(*e*) *The Habitat.*—In the dog the habitat of the parasite is formed by the hair follicles and sebaceous glands at various parts of the body.

Symptoms.—Follicular mange presents itself under different aspects, depending on the duration of the disease, and this polymorphism is apt to lead to mistakes. We will, therefore, take a case of the disease and accompany it in its uninterrupted course. At first there is slight and circumscribed tumefaction of the skin, with an increase in the local temperature, and if the skin is white little red patches are seen which are not long in becoming confluent. From these patches the hair is shed, and red depilations result. Before this stage the symptoms are seldom marked. The most frequent seat of these depilations are as follows. About the elbows, hocks, round the eyes, and at the toes. In place of the hairs small papules are seen, and the reddened areas are covered with a fine powder, resulting from disquamation. Gradually these hairless areas extend, become redder, reach the cheeks and the inner surface of the paws. The eyelids become swollen and inverted, producing the condition known as entropium, and the edges are covered with an abundant purulent matter. The skin of the cheeks is now thickened, depilated and wrinkled, and covered with papules, and many pustules more or less irritated. Pruritis, or itching, is not very marked; in fact, if the dog scratches itself much it emits sharp cries of pain, and is in no way relieved as in ordinary mange. Finally, the disease becomes generalised, occupying the entire surface of the body. The skin everywhere presents in different degrees the characters it first showed on the head. Everywhere is a crowd of pimples, either discrete or confluent, some papular, others having become pustular. The contents obtained by squeezing the pustules are found to be a thin sanguinolent pus containing the demodex. The parasites are more numerous in the pustules than in the papules or acne spots, which exude a cylinder of sebaceous material on squeezing. The parasites may be so numerous as to constitute the greater portion of the exudation. Owing to the confluence and rupture of the pustules, and drying of the contents, abundant crusts are formed at various points; these crack and bleed and produce a most repulsive appearance. In the parts most severely affected the skin is cracked and moist as well as almost hairless, and in the folds a yellow, viscid matter is seen. The animal exhales a fœtid, nauseating and sour odour supposed to be diagnostic. When this stage is reached great constitutional disturbance is produced, and the appetite, which in the first stages was unimpared and later ravenous, from excessive loss of heat from the skin, now diminishes, emaciation sets in, which gradually lapses into marasmus and death.

In certain cases the disease is generalised, but does not cause depilation except in certain circumscribed spots. The pustules are rare, but are uniformly disseminated. The whole of the skin is covered with a fine dust. Where the hair is absent, there is much irritation, a serous exudation, excoriation, and even small sores. These hairless areas are usually more or less circular.

Another form is known as the circinated form: circular patches from $\frac{3}{4}$ inch to 2 inches in diameter, devoid of hairs, reddened, with slightly raised borders, and frequently but not exclusively presenting at the edges small, pustular, acneous pimples surrounded by rosetta. These patches enlarge, and may become confluent, forming more extensive areas with largely festooned borders. Often the centre becomes pale and covered with yellow dust, resulting from disquama-

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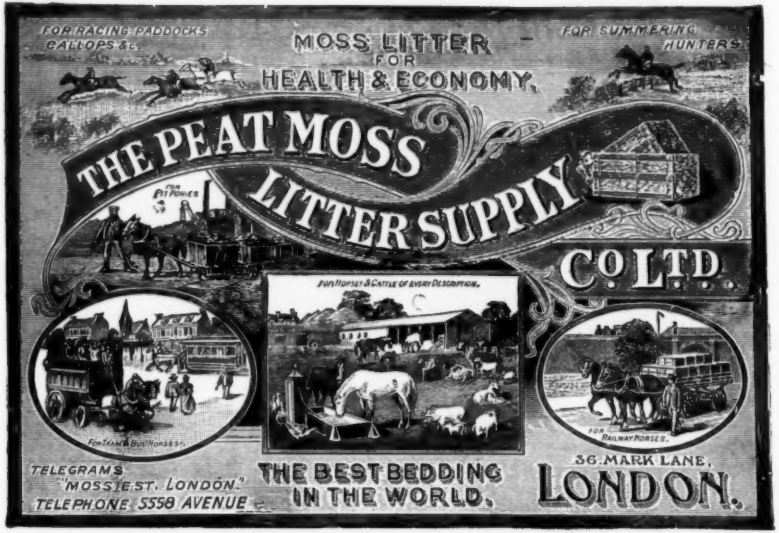
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The "COUNTY GENTLEMAN," *April* 1, says: "Chief among the merits of Peat Moss are the ease with which it is stored; the small danger it offers as regards fire compared with Straw; non-conductivity; the great powers of absorption; its antiseptic properties, and the ease and advantage with which it can be used as Manure in town gardens and in the country."

tion. This may be accompanied by the former or acneic variety. Pruritis is not marked, and the general health is not much affected.

This form is closely related to another form known as the squamous form, which is of frequent occurrence. The only signs are loss of hair and the appearance of epidemic scales. It usually commences about the eyelids, and the eyes are surrounded by a bald circle which is somewhat red and scaly. This kind may spread all over the body, and is often distinguished by the deep tint of the patches, which are sometimes circular. As a rule, no itching.

Course.—The course of the disease is very long and cases have been seen of one year, two years', or even longer duration. It usually terminates in death from exhaustion, from destruction of the skin functions and loss of hair.

Diagnosis.—Although the symptoms have been described in some detail, yet depending on them alone, it is possible to mistake the disorder for others which have somewhat similar appearances. In all cases of uncertainty resort must be had to the microscope, and as this is neither difficult nor tedious, there is no reason why the method should not always be employed, as the parasite can be discovered with ease, and its characteristic shape renders it easily distinguishable from other acari. In making preparations it is well to add a little liquor potassæ, as this greatly facilitates detection owing to the solution of the crusts, but not the parasites. A 10 per cent. solution for one hour is all that is wanted, and a magnification of from 40-50 diameters.

The other skin diseases of the dog, which it is possible to mistake for this one, are ringworm and eczema, the former being due to a vegetable parasite, the *Tricophyton tonsurans*, which consists of spores and tubes forming the mycelium, and to see this a magnification of 300 or 400 diameters is necessary; the latter (eczema) is not caused by a parasite at all, and so one is undiscoverable.

The circinated form may be mistaken for ringworm, or *Tinea tonsurans*, but in follicular mange the hairs are not altogether absent, whereas in tinea they are broken off close to the skin and the affected part appears as if shaved.

The disease may be mistaken for ordinary mange or sarcoptic scabies, but in the latter the papules rarely become pustules, while the acne pimples are almost a constant sign of follicular mange, which is also less pruriginous and slower in its course. As a rule, also, in the ordinary mange the skin is not thickened and there is complete depilation.

From eczema or red mange it is distinguished roughly by the eczema only as a rule affecting the belly and less extensive areas. Otherwise the two are very much alike. There are two other skin diseases of the dog which will bear mention. They are:—

(1) Loss of hair in smooth-haired toy dogs; accompanying this there is no redness and no pustule formation. Non-parasitic.

(2) The other is an erythematous skin affection of young dogs, but it is distinguished by being non-parasitic. Instead of commencing at the head and paws, and of being acneiform, it appears on the limbs on the inner surface of the thighs and forearms, and in those places where the skin is almost hairless and fine. It is accompanied by great itching and artificial lesions are produced.

From the skin form of distemper it is distinguished easily. In the latter disease the pustules are on the belly and thighs, widely separated and not accompanied by loss of hair.

Etiology.—There are two theories with regard to the pathogenesis of this disease, namely: (1) That the disease is due to the presence of the demodex in the follicles. (2) That the accumulation of the parasites is the result of a state of irritation existing in the skin. It has been imagined by some people that the demodex is present in all dogs, even those in the best condition, and that there is no disease until their number becomes excessive. Thus, by these persons the disease was regarded as a dermatitis, situated more particularly in the hair follicles and sebaceous glands, which, then receiving more blood, furnish more nutriment to the pre-existing demodex and allow an extraordinary multiplication. These ideas are not well founded. No investigations have established the constant or very frequent infection of the normal skin of dogs by the parasite. A fact cited in support of this view is the difficulty of transmission of the disease from dog to dog, although this may be explained by the deep intra-cutaneous situation of the parasites and the necessity for a predisposition.

Contagiousness.—This just-mentioned predisposition relates to age, old animals being rarely attacked. No breeds are exempt, but it appears that short-haired dogs are more frequently attacked than long-haired ones. Accepting these predisposing causes, the exciting cause is contagion, but this is much less easy to produce than in the other kinds of scabies, owing to the deep situation of the parasite. Sometimes affected and healthy dogs may remain in contact for long periods without the latter contracting the disease, at other times the slightest contact will suffice to convey it. One patient lived from eight to fifteen days among other dogs, without their contracting the malady. (Weiss.)

In another case the demodex was actually transferred from a diseased to a healthy dog without result. (Rivolta.)

Fluid from the pustules on diseased regions, rich in parasites, has been inoculated into the skin of a dog with negative results. (Martemucci.)

On the other hand, the disease has been excited by depositing demodex infected pus on the skin of a healthy dog, for at the infected point in about twenty-four hours there was tumefaction of the skin; in forty-eight hours the follicles contained a purulent fluid, in which ova, young and adult acari, could be microscopically distinguished, but the parasite disappeared and recovery took place.

Carnevin made four inoculation experiments and succeeded in one, but here also in about eight days the malady vanished of itself.

A nursing bitch also infected two of her puppies, a third escaping. Another similar case is on record, in which a bitch was suckling two pups, both of which died of the disease.

In fact, clinical observations indicate that transmission is very difficult.

A marked feature of the disease is its marked resistance to parasiticides; nor is this at all curious, when one takes into consideration the deep situation of the parasites in the hair follicles. In this point also the disease differs from the analagous condition in man, in him the disease being easily amenable to suitable treatment. This is explained

on the comparatively superficial position of the parasites in man, they occupying the mouths of the sebaceous ducts only, and not invading the hair follicles.

Large numbers of parasiticides have been tried, but generally without effect, and this is because the parasites are beyond the penetrating power of the agents employed. Some. however, have been used with good result, though they are exceptional.

Balsam of Peru diluted with 4 parts of alcohol has been used; rubbed into the skin every day after squeezing the pustules to remove the contents. But the treatment is very expensive, owing to the long time it has to be continued and the care required; for, in simple cases, cures have only been effected after fifty-eight days' rubbing. On one occasion after sixteen weeks' treatment of a dog that was seriously affected, it was supposed to be cured, but the disease reappeared after the cessation of the application.

Another method consists in the use of potassium sulphurata and cantharides ointment. The dog having been clipped he is immersed in a sulphur bath (500 grammes to 50 litres of water). For three successive days afterwards the body is dressed with cantharides ointment, diluted with 6 parts of lard, one-third of the body being done on each day, as this can be done with safety; complete besmearing of the body at one time would greatly derange the skin functions. On the fifth or sixth day the entire body is washed, and a few days after the sulphur is again applied, followed by the cantharides, and so on until a cure is effected. But this treatment also takes a long while, and is even then not always successful. Moreover, the dogs must have special care, as great precautions must be taken with regard to the cantharides. The treatment is very drastic, and involves danger to the eyes, which can be avoided by using balsam of Peru round these.

Creolin has been successful in a case of partial disease in the strength of 30 to 100 of water, or as an ointment 5 to 100 of lanolin.

Essence of juniper applied by friction is said to have proved successful.

Mr. Hunting recommends a mixture of creosote, liquor potassæ, and olive-oil, in the strength of creosote, ʒi.; liquor potasæ, ʒii.; olive-oil, ʒxiv.; mixing the creosote and oil, and then adding the alkaline solution. One or two applications a week according to the degree of the disease. The treatment must be continued for months.

Corrosive sublimate has been employed as a bath (1-2 grammes to 1 litre of water). But mercurialism may result from drinking, licking or absorption of the skin. (Antidotes being $KClO_3$ and tincture of quinine.) The bath at first must last for ¾-hour, gradually diminishing to ½-hour.

Benzine ointment has proved successful in partial cases (1-4 lard).

Other recommended ointments are (*a*) carbolic ointment (1-30); and (*b*) caustic potash or as a solution.

Sulphuretted lime has been especially recommended, and is prepared as follows:—Boil 100 grammes of sublimed sulphur and 300 grammes of quicklime in a litre of water. After boiling, decant the clear portion and keep it well corked in a bottle. For use it is diluted with four or five times the weight of tepid water, and so applied by means of a sponge until the disease is cured.

A remedy has been in recent use at this college, consisting of

salicylic acid, gum, storax, zinc oxide and sulphur of each ʒi. to ʒi. of lard. With regard to the efficiency of this no opinion can yet be given. I am told that one dog was completely cured, but, on the other hand, I saw a case the other day which had been treated for two months with it, and was reported to be getting worse.

The danger after apparent recovery lies in the possibility of recurrence.

It would appear that some of the parasites are able to exclude themselves from the unpropitious circumstances into which their contemporaries are thrown as the result of the germical application and lie for a time dormant. As soon, however, as the treatment is stopped, they spread with all their former potency. This could in a great measure be overcome by continuing treatment after apparent recovery.

Other Animals affected by the Disease.—Man, where it affects the face and back. The cat, in which it is inoffensive, affecting the nose and ears. The goat and ox, in which it is responsible, for a pustular affection. In the pig the disease resembles that in the dog. The sheep and horse are attacked, the disease being localised in the Meibomian glands, and in the horse in the muffle also. With the exception of man, however, the disease in these animals is rare.

VETERINARY TOXICOLOGY.

BY LIEUT.-COLONEL NUNN, F.R.C.V.S., F.R.S.E., C.I.E., D.S.O., BARRISTER-AT-LAW, AND FORMERLY DEPUTY DIRECTOR-GENERAL ARMY VETERINARY DEPARTMENT.

(*Continued from p.* 44.)

Atropine and Hyosciamine.

The alkaloid atropine is the active principle of the deadly nightshade, *Atropa belladonna*, and is found in every part of the plant, but more particularly in the root; the quantity also varies with the season of the year. It is also found in the seeds of the *Datura stramonium*.

It is white and crystallises in the form of fine needles, has a bitter taste, is soluble in alcohol and chloroform and slightly so in water and ether. Hyosciamine or aubosine is an alkaloid very much resembling atropine and has almost the same chemical reaction. It is chiefly found in both black and white henbane, datura, and in small quantity in the atropa belladonna.

Poisoning from this cause is uncommon, as animals appear to be instinctively aware that the plants are noxious; the pig, sheep, goat and rabbit appear to have great powers of resistance when the poison is taken by the mouth. The carnivora, however, are more sensible than the herbivora.

Atropine is readily absorbed and rapidly eliminated in the urine, especially by the herbivora, which explains the great powers of resistance of these animals and the rapidity with which they recover. The atropine belladona has berries that are at first green, but turn brown and black, and being mistaken by children for other fruits are a frequent cause of poisoning. According to Florence, fifteen berries

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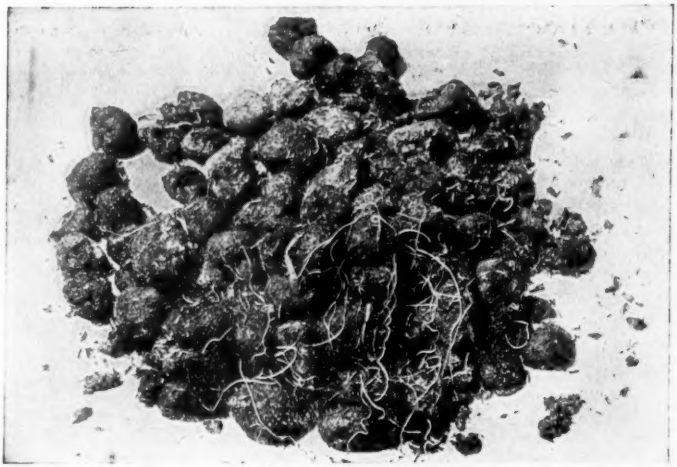

Photograph of a portion of the manure from "IRENE" before being fed with Molassine Meal.

It is a common thing for horse-owners and stock-feeders to write to the Molassine Co., Ltd., pointing out how much better some other foods are from an analytical standpoint than Molassine Meal.

The reply is, that **it is not what an animal eats, but what he digests,** that is of service. If horse-owners and others would but examine the manure in their stables, they would often find that a large proportion of the food given to animals passed through in an undigested state, and that its money value might just as well have been thrown away. This represents a serious loss during the course of a year, and the intelligent stock-feeder should give it his careful attention.

The photograph represents manure from "Irene," before feeding on Molassine Meal, and it will be seen that it contains a large proportion of oats and beans which have come from the animal just as they were eaten.

The photograph shows that the oats and beans had begun to germinate, and distinct growths of oats and beans are to be seen, showing clearly that on account of the low vitality of the animal, fermentation and other stomach troubles had set up, which affected the digestive organs and made them incapable of performing their proper functions.

PRICE: £6 15s. per ton, or 7s. 6d. per cwt. at Works, LONDON or LIVERPOOL.

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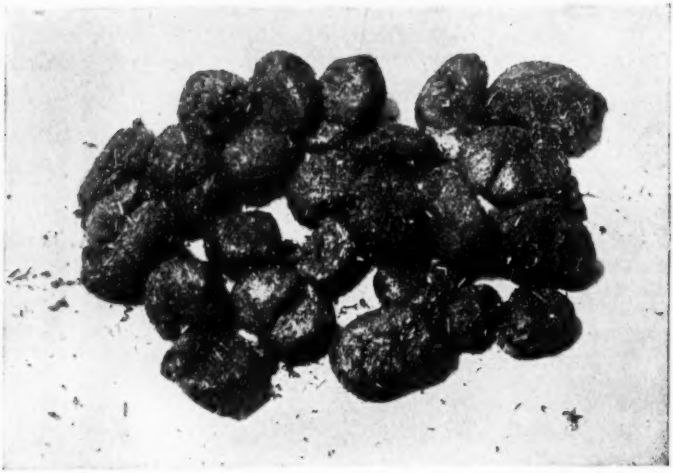

Photograph of Manure from "IRENE" after feeding with Molassine Meal.

This photograph shows manure some weeks after "Irene" had been fed on Molassine Meal, and after it had lain sufficient time for germination to take place in case there had been any undigested grain pass through. It is quite free of any cereals and is perfectly healthy and inodorous, showing that Molassine Meal has had its usual effect upon the stomach and digestive organs, and had brought the animal to a perfectly healthy condition, **and able, as we claim, to obtain the full amount of nutriment of his entire food,** to the financial benefit of the owner.

Another mistake buyers sometimes make is that they attempt to compare the value of Molassine Meal with cake or other food. Our answer invariably is, that you cannot compare Molassine Meal with any other food, as there is no comparison. **It is not only its actual feeding value, but the tremendous additional value it gives to all other foods, in consequence of its antiseptic and digestive properties.**

Horse-owners and stock-feeders can test this feature for themselves, when they will have the same results.

PRICE: £6 15s. per ton, or 7s. 6d. per cwt. at Works, LONDON or LIVERPOOL.

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are a fatal number for man and a gramme of the extract is dangerous. Hertwig gave horses 6 oz. of dry powdered belladonna leaves in water at intervals of four to eight hours, toxic symptoms appearing in about five hours and death in about fifty hours. Cattle, he states, are as susceptible as horses, and for dogs 50 grains of the dried plant proved fatal.

The action of the poison is to cause general excitement, rapidly followed by progressive paralysis and death from failure of the heart's action.

Symptoms.—The earliest are nausea followed by vomiting, the mucous membranes are infected and there is excitement, hallucinations and convulsions, accompanied by cries that may be mistaken for rabies. The pulse is small and quick and the respiration laboured and quickened. This period is of short duration and is quickly followed by paralysis, the heart-beats getting weaker, the sphincters relaxing, the temperature falling several degrees, and death taking place in a state of coma. In some cases there is palzuria. The mydriatic action on the eye is not always seen, and M. Stroube says that it does not affect birds in this manner.

Treatment.—The antidotes to atropine are coffee, tannin and iodine, which form insoluble salts that can be eliminated by purgatives or emetics; animal charcoal is also recommended. The local symptoms are treated by sedatives during the period of excitement and stimulants during that of depression.

Chemical Analysis.—Atropine resists putrefaction for a long time. The *post-mortem* examinations must be made with great care, as the vegetable *débris* from the stomach and intestines may furnish a valuable clue, and the urine also should be collected for analysis. The alkaloid can be isolated by Dragendorff's method; its principal characteristics are:—

(1) The addition of sulphuric acid and bichromate of potash give off a smell of bitter almonds.

(2) With fuming nitric acid and potash a reddish violet colour is obtained.

(3) The physiological test may be had recourse to, a drop applied to the eye of a rabbit or small animal causing dilatation of the pupil, but it is not reliable, as datura, hyoscyamine, digitaline and certain poisonous fungi have the same effect.

Hemlocks and their Alkaloids.

The natural order of Umbellifera contains a number of plants that are highly poisonous; amongst them the most noticeable are the hemlocks, the toxic properties of which were known to the ancients, Socrates having been put to death with it in 400 B.C. The varieties chiefly met with are the large hemlock (*Conium maculatum*), the water hemlock (*Cicuta virosa*), and the fool's parsley (*Arthusa cynapium*). There are also several aquatic plants *Œnanthe crocata*, *Œnanthe gistolosa*, and *Œnanthe phellandrium*.

All these plants can be mistaken for certain edible ones, such as parsley and chervil, but they can be distinguished by their nauseous and acrid smell.

The poisonous principle of the hemlock is an alkaloid conine, a colourless, oily substance with an acrid smell somewhat resembling

tobacco. It is soluble in water, ether, and alcohol, and turns yellow when exposed to the light. The other alkaloids are methyl conicine and conhydrine.

The quantity present depends on the species of the plant and the season of the year; in the seeds more being present when they are ripe and in the leaves when the plant is flowering. By drying most of the poisonous properties are removed, and they are altogether so by boiling.

The large hemlock is the chief cause of poisoning, and the victims usually are cattle in the spring of the year, but a large quantity of the plant has to be taken before dangerous symptoms are produced, and it is generally eaten with other forage. The small ruminants appear to be nearly refractory to its effects.

The *Œnanthe crocata* that grows in ditches also is a cause of accidents in cattle who eat it readily, the whole of the plant being poisonous, but especially the roots.

The poisonous doses per kilogramme of live weight are, according to Cornevin :—

Horse	...	...	1	gramme of	fresh	leaves.
Ox	...	...	1·25	,,	,,	,,
Sheep	...	...	2·00	,,	,,	,,
Pig	...	...	1·50	,,	,,	,,
Rabbit	...	...	0·20	,,	,,	,,

Symptoms.—Cocaine paralyses the peripheric nerves, but does not act on the muscles, it extends to the motor centres of the cord and brain, causing death by asphyxia. Locally it is a powerful irritant. There is profuse salivation with champing of the jaws, nausea and vomiting, and at the same time colic and diarrhœa. The pulse is quick, with tremors, convulsions and toxic spasms, followed by paralysis commencing in the hind quarters. There is relaxation of the sphincters and death from asphyxia. Like nicotine, conine is a most virulent poison, a single drop placed in the eye killing a guinea-pig.

Treatment usually is without avail, as when the animal is discovered to be ill he is too far gone, but the line of treatment is stimulants, emetics and artificial respiration. The antidotes are taurine, iodine, and iodide of potassium with demulcents to combat the gastro-enteritis, but it is essential that the animal be treated at once.

Post-mortem appearances are gastro-intestinal enteritis with hæmorrhage, the degree of which depends on the rapidity of death. The other organs of the body are generally engorged with black fluid blood.

Chemical Analysis.—This is rarely required, as it is extremely improbable that animals would be poisoned by the alkaloid, and the leaves of the plant would be recognised in the ingestæ; in fact, the only time it might be necessary to make an analysis would be if the animal were poisoned with a decoction of hemlock leaves, but this is not likely to take place.

Stas's method can be used, always remembering that conine is liquid and volatile. The etherial extract will give the following reactions :—

(1) Hydrochloric acid gives a purple colour, changing to an indigo blue.

(2) With nitric or chromic acid butyric acid is formed, which is recognised by its smell.

(3) A very minute trace of the product subcutaneously injected into a frog will cause death in a few seconds.

The analysis, of course, is a delicate one, as it is likely to be confounded with trimethylamine, which exists in herring brine and cadaverine.

Colchicum.

The two poisonous plants that most frequently come under notice that belong to this natural order are colchicum and veratrin, or white hellebore.

The colchicum autumnala, meadow saffron, or kill dog, is a plant with a subterranean bulb that flowers with a lilac-coloured bloom in the autumn. It grows in wet pastures, and the whole plant, but particularly the bulb and seeds, contains the active principle calchicine, which is a yellow amorphous powder with a very bitter taste and a faintly alkaline reaction. It is soluble in water and alcohol, and slightly so in ether.

Cases of accidental poisoning in the domestic animals are not rare, "cattle usually being the victims," from eating the flowers in the autumn and the leaves and fruit in the spring, which may also be cut with hay from the fields the plant grows in. The active principle is very virulent, and is a violent irritant, giving rise to gastro-enteritis and hæmorrhage.

The alkaloid is very slowly absorbent, which explains why the symptoms are so slow in showing themselves even after a large amount of the plant has been eaten. May and September are the times that cases usually take place.

The colchicum first excites and then paralyses the central nervous system as well as the peripheric extremities of the nerves, and the effects are seen sooner when the dose is large and causes asphyxia. The carnivora are much more susceptible than ruminants, as it has been shown that the toxic dose per kilogramme live weight is two milligrammes for the cat and dog, three centigrammes for the pig, and one centigramme for the rabbit. The quantity of colchicum capable of killing the large ruminants has not yet been determined, as it varies with the season of the year, but Cornevin gives the following as the average :—

Green leaves,	8 to 10	grammes	per kilo. of live weight	in ruminants.
Fresh bulbs,	0·30	,,	,,	in the pig.
Dry bulbs,	2	,,	,,	in the dog and cat.
Dried leaves,	3	,,	,,	in the dog and cat.

Symptoms.—The symptoms are slow in appearing, there is profuse salivation, difficulty in swallowing, nausea and vomiting, at first of food, followed by mucus and bile; there is violent colic and diarrhœa, which may run on into dysentery and great straining. The respirations are laboured and weak, pulse quick and weak, mucous membranes of a livid colour, and the temperature falls. At first there is polyuria, followed by suppression of urine, when paralysis sets in with loss of

with the season of the year, but the poisonous dose of the dried plant is given by Kaufmann as 375 to 400 grammes for the horse and 5 grammes for the dog.

Symptoms.—In saltpetre when taken by the mouth there is at first salivation with champing of the jaws, nausea, attempts to vomit, colic, and diarrhœa. There is painful contraction of the inferior cervical and abdominal muscles, and increase in the secretion of urine. Paralysis then sets in, respiration is difficult and stertorous, the heart-beats weak and quick, pulse fluttering, the mucous membranes blanched, temperature falls, the pupils are dilated, movement becomes difficult and there is loss of sensation, and the animal falls down and dies in convulsions.

In the dog the same symptoms are seen: uneasiness, salivation, polyuria, and painful and violent vomiting with colic and diarrhœa. The animal champs his jaws and licks his face, rubbing his nose and mouth with his paws as if to remove some foreign body. The pupils are dilated, the respirations panting and the heart-beats become weak, finally stopping, but the animal retains his senses to the last.

Treatment.—Treatment must be prompt. The antidotes for aconitine are tannin and iodide of potassium, with purgatives and emetics. Stimulants, such as coffee, ether, and camphor, should be given to counteract the paralysis, and the hypodermic injection of ether is also recommended with the same object.

Post mortem.—There is gastro-enteritis, but if the nervous symptoms are rapidly developed they are not very well marked. The kidneys and bladder are congested, and there is congestion and ecchymosis of the meninges of the brain, endocardium, lungs, and pleura.

Chemical Analysis.—The leaves and *débris* of the plant will probably be found in the stomach and intestines on *post-mortem* examination. The alkaloid can be isolated by Stas's method and the extract will give the following reaction:—

(1) Concentrated sulphuric acid gives a yellow colour, turning brown and finally violet (Frohde's test).

(2) The physiological test can also be used, a frog first becoming convulsed and then paralysed. Dr. Headland recommends an alcoholic extract of the acid contents of the stomach, $\frac{1}{20}$ of a grain being sufficient. He states that $\frac{1}{300}$ of a grain will poison a mouse, $\frac{1}{100}$ a small bird and $\frac{1}{1000}$ will cause numbness and tingling of the tip of the tongue, $\frac{1}{100}$ dissolved in spirit and rubbed into the skin causes loss of feeling (*Lancet*, March 29, 1856).

(*To be continued.*)

Reviews.

SPORTING DOGS, THEIR POINTS AND MANAGEMENT. By F. T. BARTON, M.R.C.V.S. Price 7s. 6d. net. Published by Everett and Co.

In some 450 pages Mr. Barton has placed before the public an illustrated *résumé* of the rules which control the clubs presiding over the various sporting breeds of dogs.

It is intended as a companion volume to one which has recently been published by the same author on "non-sporting" dogs.

The points of the various breeds used by sportsmen are freely discussed, and the work is well illustrated from photographs of the most celebrated animals known.

There are also chapters on kennel management, on the training of dogs for sporting purposes, and on amateur treatment in cases of emergency, the latter being palpably only intended for use until skilled veterinary aid can be obtained.

There is no doubt that the book will find a ready sale, as it is full of interesting matter, and the binding and letterpress do credit to the publishers.

A Manual of Veterinary Hygiene. By Colonel Fred Smith. Third edition; price 15s. net. Pp. 1036; 355 illustrations. Published by Messrs. Baillière, Tindall and Cox.

When a veterinary student's manual has reached a third edition within a few years it is quite obvious that it scarcely needs any praise to recommend it.

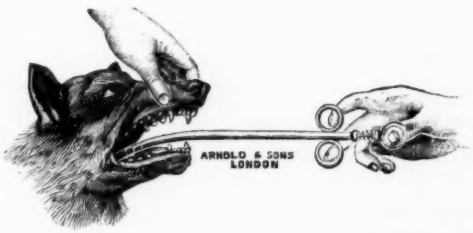
The text-book on Veterinary Hygiene by Colonel Fred Smith is one which every practitioner should have on his bookshelf. The chapters on State and Municipal Hygiene alone recommend it to every man who wishes to keep abreast of the times, whilst that on Military Hygiene cannot be inspired by any author better acquainted with this special subject than Colonel Smith.

The book is so full of valuable information, both for student and practitioner, that we think it will be invidious to praise any individual portion.

We have no option but to advise our readers to add it without delay to their library.

A New Instrument for Administering Pills to Small Animals.

A handy instrument for the administration of solid medicines for dog and cat without risk of injuring the throat, and without causing great distress or inconvenience to the patient, has long been wanted, and by the courtesy of Mr. Flook, M.R.C.V.S., the inventor, we have had an opportunity of testing an instrument which he has recently brought out.



Our experience of it has been that it is exceedingly handy, and answers all the purposes which are claimed for it.

After having become familiar with its method of working, it is quite an easy matter to deposit a pill at the back of the pharynx in such a situation that the animal swallows it quite readily.

FRIEDBERGER AND FRÖHNER'S VETERINARY PATHOLOGY. Published by Hurst and Blackett. Price 10s. 6d. net. Authorised translation, Volume II. Translated by the late Captain HAYES, F.R.C.V.S., and edited by Professor DUNSTAN, M.R.C.V.S., F.R.S.E.

The translation of the second volume of this well-known book will be welcomed by all English students and practitioners. In Germany this is the recognised text-book on animal diseases, and it has gained such a name that it has been translated into French, and is also accepted by the French schools as one of their standard works.

The first volume was published some years ago, and was entitled, "The Infected Diseases of Animals," rapidly running through two large editions. We are quite sure that the second volume will also have a large sale, and we regret that its talented translator has been unable to see its success. It could not, however, have fallen into more able hands to be revised and edited, for Professor Dunstan has completed his task in a most capable and thorough manner. The diseases of digestion, of the skin, liver, stomach, nervous system, lungs, and indeed of every organ of the body, are most fully dealt with, the treatment, &c., being right up to date.

The methods of arrangement are excellent, and the style in which the book is brought out reflects every credit on the publishers. We can thoroughly recommend it as a book which should find a place in every veterinary surgeon's library.

Books and Periodicals, &c., received.

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